LIFESTYLES OF EMPLOYED LEGALLY BLIND PEOPLE: A STUDY OF EXPENDITURES AND TIME USE

Technical Report

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The respondents for the study were identified and recruited from lists maintained by the National Technology Center of the American Foundation for the Blind (AFB), Mississippi Vocational Rehabilitation for the Blind, American Council of the Blind, and an educational institution which offers its services nationally to legally blind individuals.

Additional organizations identified and recruited respondents for other phases of the research. Cooperating in the pretest effort were Opportunity East, a division of Volunteer Blind Industries; the Chicago Lighthouse; Mississippi Office of Vocational Rehabilitation for the Blind; and the New Jersey Commission for the Blind and Visually Impaired. Supplementary data were obtained with the help of the Arizona Services for the Blind and Visually Impaired, New Jersey Commission for the Blind and Visually Impaired, Mississippi Office of Vocational Rehabilitation for the Blind, and the West Virginia Division of Vocational Rehabilitation. Associated Blind, Inc., New York Association for the Blind, and VISIONS helped in recruiting participants in the postanalysis focus groups. Consultant Roni Rosner organized and moderated these focus groups, analyzed the data, and wrote the report presented in Appendix A.

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Introduction

It is a too familiar fact that only a minority of working age people with disabiities, and specifically, of people who are legally blind, are employed.[1] Although disability activists and scholars view the low rate of employment with justified alarm, the recent publicity about the problem may reinforce public stereotypes. The general public tends to equate disability with withdrawal from employment and from social participation in general and, therefore, with low levels of life satisfaction.

This study was designed, in part, to counter these stereotypes. It reports on a sample of *employed* adults who are legally blind as well as a comparison group of sighted people. It aims to explore the impact of visual impairment on the lifestyles of employed persons who are legally blind by applying the following: (a) time-use methodology, as a way of exploring social participation; (b) data on financial expenditures; and (c) data on educational background, family situation, use of technology, and other social factors presumed to affect time use.

This study also aims to help improve vocational rehabilitation services by broadening the view of successful rehabilitation beyond that of simply obtaining some kind of employment. One may hope and expect that the employment rate among people with disabilities is beginning to improve in response to legislation promoting that aim through access to education, more client control over services, and prohibition of discrimination. Pending truly equal employment opportunities and in preparation for it, much is to be learned by close study of today's employed legally blind minority.

In examining the daily lives of people who are legally blind, this study departs from most existing research. For example, cost-benefit studies of rehabilitation greatly oversimplify the issues, especially in measuring the benefits of rehabilitation. Benefits of rehabilitation usually are considered only in terms of taxable earnings replacing public income support. That does not capture the range of benefits that accrue from full social participation by people with disabilities in such areas as family life; community life, including voluntary organizational participation; sociability; and attendance at religious, cultural, and recreational events.

In addition, traditional cost-benefit studies emphasize the system side, that is, the costs of visual impairments to government, in the form of payments for support, education, and/or rehabilitation. Although important, this area should not be pursued to the virtual exclusion of concern about costs of visual impairments to individuals and their families. Similarly, the costs of visual impairment should be considered from the point of view of the person who is legally blind. The need for research to focus on consumers (their individual and group differences in needs, desires, successes, and failures) is now gaining more attention at a policy level.

In this study, the focus is on consumers, that is, people who are legally blind (including people who are totally blind and visually impaired). This study documents the diversity of lifestyles (the range of living arrangements and social areas of participation, including but going beyond, work) in which people who are legally blind engage. This study is intended to be relevant to an expanded concept of cost-benefit analysis. A detailed understanding of time and money costs associated with legal blindness, as those costs impinge on the individual's life, is a necessary and generally overlooked precursor to examining costs to society at large and the benefits of rehabilitation.

Throughout this report, *legally blind* refers to the following definition: best corrected visual acuity in the better eye does not exceed 20/200 or the maximum diameter of the visual field does not exceed 20 degrees. Occasionally, respondents will be divided into *totally blind* respondents (i.e., no light perception) and *visually impaired* respondents (i.e., light perception or better, but still legally blind). The researchers took a very conservative approach in defining totally blind so restrictively. *Peers* refers to the sighted respondents.

Major Issues: Reading and Mobility/ Transportation

Average adults in contemporary American society take for granted being able to read and to get around. They probably do not consider these types of activities as posing major barriers to the lifestyles to which they aspire. True, transportation problems do sometimes draw their attention, and in many professions the difficulty of keeping up with reading is an increasing complaint. However, most people view those problems as shared issues, requiring public policy solutions, rather than as individual hurdles. Indeed, public policy at the national level has long accorded prominent attention to transportation as critical to the country's social and economic goals. More recently, literacy limitations of the poorly educated segment of society has emerged as a national policy concern. Furthermore, with the passage of the Americans with Disabilities Act in 1990, transportation access and, to a lesser extent, communications access are finally being accorded similar attention for people with disabilities.

The barriers that visual impairment pose to reading and to mobility underlie some of the guiding hypotheses of this study. The expectation was that employed legally blind people, matched to a sighted sample on major demographic characteristics, would reveal distinctively different time allocations in activities most closely related to reading and mobility, while demonstrating similar lifestyles in focus and variety to that of sighted people. In other words, the question was: Given the problems posed for legally blind people by reading and mobility requirements of a print-oriented and car-oriented society, and given a group of legally blind people who have become successful in that society by gaining and maintaining employment, how do they do it? Also, what techniques do they use, and what trade-offs do they make in their expenditures and activities to meet the challenges posed by reading and mobility while maintaining economically productive lifestyles?

Related Literature

Prior research literature has not used the combination of key methodological features of this study, i.e., a focus on a national sample of legally blind people who are (or recently have been) employed; time-use methodology; and inclusion of a demographically matched sighted group for comparison. There are, however, a few pertinent studies that share this study's central concern with lifestyles of people who are legally blind (though the term *lifestyles* was not used).

Three such studies, each of which may be considered a "classic" because of their careful conceptualization and measurement and their vintage, deserve mention. Of course, the age of these studies (each is about 30 years old) and differences in study design limit their use for assessing the conclusions of this study. They are briefly reviewed in the following paragraphs.

In chronological order of data collection, the first is by Lukoff and Whiteman (no date) with data collected in 1957 through interviews with a representative sample of persons aged 15-54 years, from the legal blindness register in New York. Second, with data collected in 1961 from legally blind adults in five localities of the United States, is Josephson's study of the social life of people who are blind (1968). The third had a more specialized focus (blind veterans), although with a broad national scope (Graham & Robinson, 1968).

Each of these studies, to varying degrees, focused on the way adults with legal blindness handle the special challenges of reading and mobility, and the extent of their participation in other activities such as employment, voluntary organizations, and shopping. These areas of focus are viewed in the larger context of legally blind people's life situations. Each study pointed to evidence of diversity in legally blind persons' lifestyles, and the importance of sociodemographic influences that similarly affect the life chances of sighted people. Since none of the studies included a sighted sample, they could only suggest that some of the legally blind people demonstrated very similar activity patterns in comparison to sighted people. Numerous other studies are referred to throughout this report, as relevant.

Purpose

This project was executed collaborately by Mississippi State University's Rehabilitation Research and Training Center on Blindness and Low Vision (RRTC) and the American Foundation for the Blind (AFB). It investigated the time and monetary expenditures associated with visual impairment. The three major research questions follow:

1. Are there differential monetary costs and time utilization patterns for employed persons who are totally blind or visually impaired compared with sighted persons?
2. If so, in what categories do these different costs occur, and are they associated with particular lifestyles, life stages, and environments?
3. Are there relationships among the differential expenditures and time usage patterns associated with total blindness and visual impairment and the rehabilitation process?

Method

This report provides an overview of the data collected and the analysis completed at this point. Further analysis, especially multivariate, will be necessary to provide full answers to

the broad research questions. The project should be viewed as having developed a rich and unique database, with potential for diverse applied analyses.

The first phase of the project entailed developing an instrument for data collection, pilot testing the instrument in four states, and refining the sampling approach. Respondents were recruited from a variety of sources including AFB's *Job Index* (now called the *Careers and Technology Information Bank* [CTIB]). About 50 people were purposively selected to yield variation in the following categories: age, gender, occupational status, urban or rural residence, marital status, and degree of vision.

In the summer of 1987, respondents were interviewed three times to examine the dollar costs of daily management; demographic data; and information on employment, reading, transportation, and the use of assistive devices. During the second and third interviews, respondents were asked how they used their time on the preceding day and the associated costs. In addition, respondents who were legally blind were asked to identify someone who is like them in terms of age, sex, and living arrangements outside of their household. Cooperating sighted peers were contacted three times and asked similar questions about their time and money use and background information. Respondents were paid fifteen dollars to participate in all three interviews. In addition, two focus groups were held to improve the questions about reading and transportation.

The data gathered in this phase were used to refine the sampling methodology and the questionnaires. Respondents' difficulty in identifying costs associated with time use led to dropping that item in later instruments. Other questions were reworded. See Appendix B for the five instruments developed for use in the second phase.

For the second phase, one list of potential respondents was drawn from CTIB. CTIB consists of people who responded to widely disseminated announcements requesting participation in a network of people with visual impairments willing to share information about the jobs they hold and the types of technology they use. A second source was a mailing list of an educational institution which offers its services nationally to legally blind individuals. From these sources, names were selected of currently employed people distributed by age, sex, education, and visual status. The researchers presumed that those characteristics might significantly affect time and money use. Potential respondents were mailed a cover letter describing the study and asking their participation with the offer of a token payment of $5.00 for each completed interview ($25.00 total).

Over the course of a year, data were collected from 227 persons who were legally blind. Twelve people were deleted from the study because of failure to participate in two or more interviews. Four people refused to participate after first indicating their willingness to do so. In addition, four people died over the course of the interview year. For further information about the role of death in time use, refer to the paper by Graves, McBroom, Kirchner, and Nelson (1990).

During the initial telephone contact in March, 1988, respondents were asked about their vision loss, health problems, methods of reading, and use of readers. Finally, respondents were asked to provide the name and telephone number of a sighted, nondisabled person who was like them in terms of living arrangements (lives alone or with others), sex, and age (within 10 years) (see Appendix C). These selection criteria seemed the most important controls for the time-use analysis and were not unreasonably complex. Sighted peers were contacted by interviewers who outlined the study. Seventy-five respondents who were legally blind were unable to identify a sighted peer for this study. In addition, seven sighted peers refused to participate. The 152 referrals who agreed to participate

were asked the same questions as the respondents who were legally blind except for questions which applied only to a person with a visual impairment.

This sample selection strategy indirectly controls for general socioeconomic status and reduces the chance of finding differences between people with and without sight. The analysis, therefore, is likely to underestimate differences that exist because of socioeconomic status differences between legally blind and sighted people in the general population. It also biases the data in favor of legally blind people who are relatively high achievers and who have some connection with blindness organizations.

At the agreed upon time, legally blind and sighted respondents were contacted for the second telephone interview between early April and May. Respondents were asked about personal care activities, mobility and transportation, and aids and adaptations.

At the end of the second and subsequent questionnaires, time diaries were used to elicit information about how time was spent during the previous day, starting with 12 midnight. Respondents were asked what they were doing and at what time they ended the activity. Respondents were then asked whether they were "doing anything else at the same time." The time diary forms provided space to record up to two other activities that went on concurrently with the original, or "primary," activity mentioned. This line of questioning covered the entire 24-hour period.

Respondents were again contacted in June, August, and the late fall/early winter period (October through December and into early January). They were asked about their education, employment history, household composition, type of community, life satisfaction, use of vocational rehabilitation services, and income. Time diaries were again collected for the previous 24-hour period. At the conclusion of each interview, interviewers completed a report (see Appendix D) which gave the researchers further insight to the responses.

Separate interviews were conducted during each season (winter, spring, summer, and fall) to represent the different activity patterns that typically occur throughout the year. Interviews were also scheduled to sample different days of the week: Fridays, Saturdays, Sundays, and the weekdays (Monday through Thursday). When only one interview was missing, time diary information from another time period was substituted in the following manner: (a) a weekday time diary substituted for a Friday diary and vice versa and (b) a Saturday time diary substituted for a Sunday diary and vice versa. Questionnaire information was not substituted and appears in the database as missing information.

Time diaries were coded using a list of activities compiled by Juster and Stafford (1985). The list was expanded to include activities performed by people with visual impairments (for example, using a sighted guide or dog guide) to yield a list of 223 activities (see Appendix E). Hours were weighted according to the day of the week (weekdays were assigned a weight of four while Fridays, Saturdays, and Sundays were weighted by one) and summed to produce a week of activities. Secondary and tertiary activities are not included in this analysis.

Referrers and Nonreferrers

As noted, there were 75 people who were legally blind who could not or would not make a referral to a sighted peer. An early task, therefore, was to examine whether those who made a referral differed from those who did not. The differences are both substantively intriguing and pose a methodological problem. To summarize the cross-tabulations with "referral" as the dependent variable, there was *no difference* in the referral rate between respondents who are totally blind and those who are visually impaired. However, there is a substantial

difference according to respondents' age at onset of blindness: if onset was before five years of age, 63% made a referral; between 6 and 21 years, 69% made a referral; onset over 21 years, 78% made a referral. These data show a difference of 15% between the youngest and oldest at onset of visual impairment. Late onset of visual impairment is related to older current age in the sample: There is an 18% difference in referral between those currently aged 35 or younger and those over 55 years of age (80% of whom made a referral).

The researchers then examined (among respondents with onset of visual impairment before age 22) whether residential versus local school education made a difference in the number of referrals. There was only a small difference (8%) at the elementary school level. However, of the respondents who attended a residential school for legally blind students during high school, only 58% referred a sighted peer, compared to 72% of those who attended a local high school. Furthermore, for those with onset before age 22, there was a substantial difference according to the highest level of education completed: 60% of those who stopped at high school graduation made a referral, 65% with some college or college graduation made a referral, and 78% of those with postgraduate education made a referral.

As will be seen later, a few legally blind respondents, although employed when selected for the study, ceased employment during the study period. Respondents who were currently working had a substantially higher referral rate than those no longer working. Two other factors stand out: (a) whites had a much higher referral rate than nonwhites (the number of nonwhite respondents is very small); and (b) married people referred at a much higher rate than single people. All in all, the nonreferrer group appeared to be somewhat segregated from the so-called *mainstream* group and more disadvantaged in terms of socioeconomic factors.

The methodological decision had to be made whether to include or exclude the nonreferrers in comparative analyses with the sighted group. A set of crosstabulations with background factors was produced in which nonreferrers were first included and then excluded. Surprisingly, some contrasts with the sighted group were a bit sharper when compared only with the referrers, while other contrasts were diminished or not affected.

The researchers decided to include the nonreferrers in this report. This decision gives the advantage of retaining larger numbers for analyses. Furthermore, whenever controls are introduced for age, marital status, education, or ethnicity, the key factors on which the referrers and nonreferrers differed are taken into account.

Tests of Significance

Given the study objectives, the analysis includes many comparisons between (a) legally blind and sighted respondents and (b) totally blind and visually impaired respondents. As in all studies, what constitutes an *important* difference is not necessarily a *clearcut* difference. This study uses two criteria: (a) the magnitude of percentage differences between groups and (b) patterns of relationships in the data, which may include differences that are relatively small. For most purposes, the analysis will not employ tests of statistical significance, which indicate the probability that an observed relationship (e.g., between visual status and educational attainment) is attributable to sampling error only.

This decision is justified on two grounds. First, tests of statistical significance assume the use of random sampling techniques that do not entirely apply in this study. Second, the sample design maximizes the likelihood of similarities in background between the legally blind and sighted samples; even small differences in factors (e.g., education) that served as a basis for sample selection, therefore, can be indicative of much larger differences in the

general population of employed legally blind people. Third, stressing statistical criteria over substantive ones can defeat the exploratory goals of studies like this one. In investigating the relatively unfamiliar terrain of employed blind people's lifestyles, substantive considerations can be more useful than statistical criteria in developing insights and hypotheses for future research.

Unsuitable Data for Examining Vocational Rehabilitation and Time-Use Patterns

A small study was designed to examine the effect of vocational rehabilitation experience on time-use patterns. Briefly, data were collected in four states, using interviews, time diaries, and case record abstracts for recent clients in three vocational rehabilitation outcome categories: "not accepted"; "closed, not rehabilitated"; and "closed, rehabilitated." Case records were critical to measuring the independent variable, i.e., type and intensity (including cost) of vocational rehabilitation services. The main obstacle to analysis was the enormous variation within and between states in case-recording practices (notably, much missing or inconsistent data), rendering the data on vocational rehabilitation too weak for the intended purpose. For these reasons, the data were judged unsuitable for the purposes originally planned. Interview and time diary data from employed clients may still prove useful to augment further analysis of the main study.

Respondents' Backgrounds

It is crucial to reiterate the sampling strategy because the demographic background findings are a function of that strategy. The strategy was designed to allow a comparison of time and money expenditures between legally blind and sighted people. Recognizing that life-stage (childhood, early and later adulthood) and employment status are powerful influences on time use, and the unaffordable expense of a sample large enough to encompass all those groups, the primary decision was made to limit the study to employed people. The researchers deliberately sought a sample which would include enough people in each category of characteristics that might affect time use and costs (such as age and sex), so that those effects could later be examined. The resulting sample would probably not reflect the larger population of people who are legally blind, even of all employed legally blind people. This strategy relies heavily on obtaining a well-matched sample of sighted people. Therefore, the initial set of findings, which profiles the sample in terms of vision-related and demographic characteristics, should be assessed in terms of how close the researchers came to meeting the selection aims.

There is a strong temptation to use the data as clues to the *true* characteristics and lifestyles of the employed legally blind population, because there is such a dearth of information about that larger population. Given the sampling strategy, however, the data cannot be viewed as a profile of all legally blind people who are employed. Where possible, the discussion draws on other studies to assess how well some features of this sample represent the employed legally blind population.

Visual Characteristics of the Legally Blind Sample

Of the 358 respondents, 213 (60%) were legally blind and 145 (40%) were sighted. Within the group of legally blind respondents, 66 (31%) were totally blind and 147 (69%) were

visually impaired (Table 1). For future analysis, the totally blind subgroup may be combined with people with only light perception, to create a category of "functionally blind," thereby making the size of the two subgroups within legal blindness more similar.

The majority of legally blind respondents lost their vision at an early age. Fifty-six percent of the totally blind respondents and 45% of the visually impaired respondents were born with visual impairments; 91% and 79%, respectively, had lost their vision by the age of 19. The oldest age at visual loss was 44 years among totally blind respondents and 63 years among visually impaired respondents.

Table 1. Visual Characteristics of the Legally Blind Sample

Visual characteristics	Vision status* Totally blind (%)	Visually impaired (%)	Legally blind (%)
Vision subgroups			
Totally blind	--	--	31
Visually impaired	--	--	69
Total	--	--	100
(Base N)	--	--	(213)
Age at onset of visual impairment			
Birth	56	45	48
1-5 years	17	13	14
6-18 years	18	21	20
19 and older	9	21	18
Total	100	100	100
(Base N)	(66)	(146)	(212)
Etiology of visual impairment**			
Illness - congenital	3	27	20
Illness - other	66	60	62
Accident/Injury	31	13	18
Total	100	100	100
(Base N)***	(29)	(75)	(104)

Table 1. Visual Characteristics of the Legally Blind Sample (continued)

Visual characteristics		Vision status: Totally blind (%)	Vision status: Visually impaired (%)	Legally blind (%)
Retinal defects and disorders		44	45	45
Optic nerve disorders		9	11	10
Congenital anomalies		5	12	10
Glaucoma		9	5	6
Globe disorders		6	4	4
Other causes		27	24	25
Total		100	100	100
(Base N)		(66)	(145)	(211)
Functional visual abilities				
Able to see very small things clearly (ordinary newsprint)				
Yes	--		23	16
Sometimes	--		5	3
No	--		72	50
Missing data	--		--	31
Total	--		100	100
(Base N)	--		(147)	(213)
Able to see clearly at a distance (friend on the other side of the street)				
Yes	--		7	5
Sometimes	--		6	4
No	--		87	60

Table 1. Visual Characteristics of the Legally Blind Sample (continued)

Visual characteristics	Vision status: Totally blind (%)	Visually impaired (%)	Legally blind (%)
Missing data	--	--	31
(Base N)	--	(147)	(213)
Able to see to move down steps			
Yes	--	58	40
Sometimes	--	9	6
No	--	33	23
Missing data	--	--	31
Total		100	100
(Base N)	--	(147)	(213)

*Figures do not always add to 100% due to rounding in this table and in the majority of tables to follow.
**Does not include respondents with congenital conditions manifested at birth.
***Base numbers within columns vary due to missing information.

Most respondents who lost vision after birth, whether totally blind or visually impaired, did so because of illness other than a congenital condition (66% vs. 60%). Totally blind respondents were more likely than visually impaired respondents to report accident or injury (31% vs. 13%), while visually impaired respondents were more likely than totally blind respondents to report a congenital condition (27% vs. 3%).

The leading diagnoses of all visual impairments in this study were retinal defects and disorders including retrolental fibroplasia, macular degeneration, retinitis pigmentosa, and retinal detachments (45%); disorders of the optic nerve and visual pathways including optic atrophy (10%); congenital anomalies of the eye (10%); and glaucoma (6%). Sixty-three percent of the adventitiously blind respondents lost their vision gradually and 37% experienced a sudden onset of vision loss (not shown).

Vision loss can be measured by acuity or functional ability. In this study, respondents with some remaining vision were asked if they could see small things clearly (e.g., newsprint or marks on a standard wristwatch) or if they could recognize someone from a distance (e.g., across a street). Twenty-seven percent of the visually impaired respondents could see small things clearly (all or some of the time), while only 13% could recognize someone at a distance (all or some of the time). The ability to see to move down steps is a functional measure of depth of field. Sixty-seven percent of the visually impaired respondents could perform this task (all or some of the time).

Demographic Characteristics Used in Sample Selection: A Comparison of Legally Blind Respondents and Sighted Peers

The sampling strategy largely but not completely succeeded in achieving the objectives of: (a) balance *within* the legally blind sample in terms of sex, age, and education; and (b) a good demographic match between the legally blind and sighted samples. The legally blind sample includes slightly more women, younger adults, and more college-educated people than the sampling strategy had called for. The less-than-ideal match between the legally blind and sighted samples reflects the differences between "referrers" and "nonreferrers" mentioned earlier in this report.

Unmarried legally blind people were among the least likely to make a referral to a sighted peer. It follows that there are more people who live alone in the legally blind sample than in the sample of sighted peers. The difference in living arrangements is the single largest demographic discrepancy between the two samples. Similarly, unemployed people were less likely than employed people were to make a referral. Not surprisingly, therefore, there are slightly more legally blind people than sighted people who were unemployed at the time of the first interview. In addition, legally blind respondents' educational attainment tends to be lower than for sighted respondents. These differences in the sample are consistent with the national picture. Compared to the general population, people who are legally blind are more likely to live alone, have less formal education, and are less likely to be employed (Kirchner, 1988). However, although there are some internal differences between the two legally blind subgroups, the legally blind and sighted samples are very similar with respect to sex and age.

Table 2 presents more detailed information about these demographic characteristics. Consider, for example, the similarity of the two samples in regard to sex and age. Fifty-four percent of the legally blind respondents are women, as are 56% of the sighted respondents. Similarly, the legally blind and sighted samples include roughly equal numbers of people in the early working years, 45 and under (57% compared to 60%), and in the later working years, 46 and over (43% compared to 40%).

In contrast, there is a noteworthy difference between the legally blind and sighted samples in educational attainment. Thirty-two percent of the legally blind respondents did not go beyond high school, as compared to only 20% of the sighted sample. Although similar numbers in both groups went on to graduate school, the sighted peers were slightly more likely to report a college degree as their highest educational level (26% compared to 18% of respondents). Overall, 68% of the legally blind respondents(83% compared to 71%). Corresondingly, more legally blind respondents than sighted peers live alone (29% compared to 17%).

Although the researchers attempted to limit the sample to employed people, a few legally blind people (12%) were no longer employed by the time of the first interview. The researchers decided to retain the unemployed people in the study because they had been employed until recently and some, judging from the fact that they returned to school, were planning to return to the labor force in the near future. The results of this decision was that 88% of the legally blind respondents and 95% of the sighted peers were employed at the time the first questionnaire was administered. By the time of the fourth interview, 83% of the legally blind respondents and 92% of the sighted peers remained employed.

Table 2. Demographic Characteristics Used in Selection of Legally Blind Sample Compared with Sighted Sample

Demographic characteristics	Vision status: Totally blind (%)	Visually impaired (%)	Legally blind (%)	Sighted peers (%)
Sex				
Female	50	56	54	56
Male	50	44	46	44
Total	100	100	100	100
(Base N)	(66)	(147)	(213)	(145)
Age*				
Under 36 years	44	36	39	39
36-45 years	20	18	18	21
46-55 years	11	27	22	25
56 and older	26	19	21	15
Total	100	100	100	100
(Base N)	(66)	(147)	(213)	(145)
Highest education level completed				
Less than high school	3	8	6	8
High school graduate	23	27	26	12
Some college	32	25	27	34
4-year college graduate	22	16	18	26
Postgraduate work	21	24	23	20
Total	100	100	100	100
(Base N)	(66)	(146)	(212)	(142)

Table 2. Demographic Characteristics Used in Selection of Legally Blind Sample Compared With Sighted Sample (continued)

Demographic characteristics	Vision Status: Totally Blind	Visually impaired	Legally blind	Sighted peers
Living arrangements				
Lives alone	35	26	29	17
Lives with others	65	74	71	83
Total	100	100	100	100
(Base N)	(63)	(143)	(206)	(145)
Employed at first interview				
Yes	85	90	88	95
No	15	10	12	5
Total	100	100	100	100
(Base N)	(66)	(147)	(213)	(144)
Employed at fourth interview				
Yes	83	84	83	92
No	17	16	17	8
Total	100	100	100	100
(Base N)	(64)	(146)	(210)	(143)

*Range = 19 to 71 years of age.

Aspects of Educational Experience

Because many respondents are middle-aged or older, they completed their schooling before the legislative emphasis on mainstreaming. One would expect, therefore, that residential schools for legally blind students have played a prominent role in the education of legally blind respondents. By contrast, one would expect to find few sighted respondents

who attended a residential school. For sighted people, residential school attendance is less an indication of the need for special education than of their parents' ability to pay for an exclusive school.

As expected, legally blind respondents were much more likely than sighted peers to have attended a residential school, both at the elementary and high school levels (38% vs. 19%; 40% vs. 17%) (Table 3). Attending a residential school, however, was even more characteristic of the totally blind respondents than it was of the visually impaired people. Fifty-five percent of the totally blind respondents attended residential elementary schools, compared to only 31% of respondents who are visually impaired. Similarly, 55% of the totally blind respondents and 34% of the visually impaired respondents were enrolled in residential high schools.

One might have thought that the college experiences of the legally blind respondents and sighted peers also would be considerably different. Many people believe that legally blind professionals tend to pursue teaching and other human service occupations, which often have comparatively low prestige and pay. There is no evidence, however, that the legally blind respondents in this study disproportionately prepared for the helping professions. Neither is there any evidence that their disability slowed the legally blind respondents' progress through college.

Table 3. Aspects of Educational Experiences

Educational experiences	Vision status: Totally blind (%)	Visually impaired (%)	Legally blind (%)	Sighted peers (%)
Attended residential elementary school	55	31	38	19
(Base N)	(66)	(147)	(213)	(142)
Attended residential high school	55	34	40	17
(Base N)	(66)	(146)	(212)	(138)
Major field of highest degree*				
Social/behavioral sciences	16	11	12	5
Liberal arts and general studies	36	26	30	21
Education	6	14	11	17
Social work/Rehabilitation	16	23	21	22
Law/Business	12	15	14	22
Other	14	12	12	14
Total	100	100	100	100
(Base N)	(50)	(95)	(145)	(110)
Years to earn bachelor's degree				
Less than 4 years	15	9	11	5
4 years	63	68	66	58
5 years	15	16	16	25
6 to 8 years	7	7	7	12
Total	100	100	100	100
(Base N)	(28)	(56)	(84)	(67)

*Includes persons with some college but no degree. Degree levels include AA (junior college), BA/BS, Masters, Doctorate or professional.

As Table 3 shows, when asked about their major area of postsecondary study (regardless of the level of degree attained), totally blind respondents in particular tended to report having major social/behavioral sciences or liberal arts and general studies (52% compared to 37% of the visually impaired respondents and 26% of the sighted peers). The totally blind people, in contrast, were the least likely of al to have majored in education or social work/rehabilitation (22%, compared to 37% of the visually impaired respondents and 39% of the sighted peers). The overrepresentation of sighted peers among majors in law and business is small (22% compared to 14% of legally blind respondents) with virtually no difference between the totally blind respondents and those who are visually impaired (12% compared to 15%).

Nor is there much difference in the length of time it took the totally blind respondents and the visually impaired respondents to complete their college degrees; the great majority of people in both subgroups finished in four years or less (78% compared to 77%). Somewhat fewer of the sighted respondents finished college this quickly (63%). The legally blind respondents might have finished college within four years partly because their eligibility for tuition assistance from a state agency for the blind depended on their doing so. Currently, students who receive tuition assistance must complete at least 12 credit hours every semester.

Employment

How much time one allocates to work activities depends on the broader context of one's employment situation. For example, the responsibilities of running one's own business can make self-employment more time-consuming than working for someone else. By definition, whether a person has a full-time or part-time job can make a considerable difference. The data reveal some cross-currents in the employment situations of the legally blind respondents and the sighted peers that are likely to influence the amount of time they allocate to employment (Table 4).

In some respects the workplace ties of legally blind people are similar to or stronger than those of the sighted peers. The work histories of the legally blind respondents, as noted, are more likely to involve "all full-time" work (41% compared to 24% of sighted peers). Legally blind respondents and sighted peers alike (84% and 86%, respectively) typically work for someone else; few in either group are self-employed (14% and 13%) or have another arrangement (2% for both groups).

On the other hand, fewer of the legally blind respondents have been employed for 75% or more of their adult lives from age 18 onward (51% compared to 77% of sighted peers). Even fewer of the totally blind respondents have devoted this much of their adult lives to employment (38% compared to 56% of visually impaired respondents). In this respect, the totally blind people are more likely to have significant gaps in their employment histories.

The legally blind and sighted subgroups are virtually the same in the percentage who report that they usually work part-time in the current job, i.e., less than 35 hours per week (22% and 23%). There is a small difference, however, between the groups in the percentage who work a normal full-time week (35 to 40 hours). The percentage is higher among the legally blind group (53% vs. 39%). That means that more of the sighted group report working long weeks, 41 hours or more (38% compared to 25% of the legally blind group). This grouping is based on specific hours reported in response to a survey question. The time diary information, using mean hours, also supports this pattern.

As will be seen next, the groups are similar proportionately in professional careers, which tend to entail longer workweeks. In addition, some sighted people may be working at two jobs; however, the data do not allow for this analysis.

Table 4. Aspects of Employment Experiences

Employment experiences	Vision status: Totally blind (%)	Visually impaired (%)	Legally blind (%)	Sighted peers (%)
Part-time work during career				
All or most part-time	9	8	8	11
Some part-time	48	53	51	65
All full-time	42	40	41	24
Total	100	100	100	100
(Base N)	(64)	(146)	(210)	(141)
Employment arrangement				
Work for someone else	81	85	84	86
Self-employed	15	14	14	13
Other	4	2	2	2
Total	100	100	100	100
(Base N)	(53)	(124)	(177)	(135)
Percentage of years employed since age 18				
Less than 25%	6	6	6	4
26% - 50%	16	14	14	8
51% - 75%	41	25	30	11
More than 75%	38	56	51	77
Total	100	100	100	100
(Base N)	(64)	(146)	(210)	(142)
Hours worked in typical week (current job)*				
	25	20	22	23

Table 4. Aspects of Employment Experiences

Employment experiences	Vision status: Totally blind (%)	Visually impaired (%)	Legally blind (%)	Sighted peers (%)
Less than 35 hours				
35 - 40 hours	50	55	53	39
41 or more hours	25	25	25	38
Total	100	100	100	100
(Base N)	(52)	(124)	(176)	(135)
Occupational category**				
Professional, managerial, or technical	50	50	50	47
Clerical or sales	25	33	30	29
Service	2	5	4	10
Processing, machine trades, or benchwork	12	10	10	4
Other (incl. agricultural, structural, miscellaneous)	12	3	5	9
Total	100	100	100	100
(Base N)	(52)	(123)	(175)	(135)
Years in current job				
2 years or less	16	24	22	41
2+ years through 10 years	45	45	45	32
Over 10 years	39	31	34	27
Total	100	100	100	100
(Base N)	(53)	(124)	(177)	(135)

*Data come from interview responses, not from time diaries. Excludes people who are not working or who did not respond to this question.

**Refers to currently employed respondents, with codable information coded according to *Dictionary of Occupational Titles* (DOT).

Turning to occupational status, the sampling objective of a balance between upper-status (professional, managerial, or technical) and lower-status occupations was achieved for each of the blind subgroups, and a good match in those terms was achieved with the sighted peers. Slight differences emerge between the totally blind and sighted groups, with the sighted peers more frequently in service jobs (10% vs. 4%) and the totally blind group more frequently in jobs likely to involve manual labor (processing, machine trades, or benchwork). Occupations were coded according to the nine-digit system of the *Dictionary of Occupational Titles* (DOT) (U.S. Department of Labor, 1977). The grouping in Table 4 is based on the first three digits of the DOT. Further analysis will examine other parts of the code which reveal functional aspects of jobs, e.g., dealing with people, ideas, or things.

At a more detailed level (not shown in Table 4), some differences emerged within the professional, managerial, or technical categories. Legally blind respondents are concentrated in the fields of "educators of the handicapped" followed by "psychologists." Other occupations in the professional category represented by four or more legally blind respondents include service industry managers, college/university educators, lawyers, and social/welfare workers. The sighted peers at the professional level are more evenly distributed across a number of occupations, but more are in primary education (other than special education) and in health care occupations. In the clerical or sales category, those in the legally blind group are mainly working as typists, telephone operators, and receptionists/information clerks. The sighted peers in that category are more likely to be in sales occupations than are the legally blind employees. The remaining categories have too few cases to report about specific occupations.

Finally, Table 4 shows that there is a substantial difference between the groups in their length of tenure in the current job, particularly in that a smaller proportion of the legally blind group when compared to the sighted group have held the job only one or two years (22% vs. 41%). Considering that the blind group has had a less continuous work history, the pattern suggests that once a job is found, legally blind people are less likely to change jobs. That may have negative consequences for career advancement (especially income), notably in the professional, managerial, or technical sector. The decision to continue on at one's present job, however, probably reflects the difficulties that even legally blind professionals can have in securing employment and in changing jobs. One study, for instance, found that many scientists who are blind "experienced at least one episode of unemployment after they completed their training"; a substantial minority settled for a job outside their field (Kirchner, Gritzer, Asch, & Burson, 1980).

Makeup of the Household

Household composition reveals important clues about respondents' domestic role responsibilities (e.g., to a spouse or children), as well as their access to informal support and opportunities for socializing. The makeup of the household, therefore, might have a strong impact on how respondents allocate their time. As one would expect, given that some legally blind unmarried respondents did not make a referral to a sighted peer, the household makeup is very different for the two samples. The most striking difference is in marital status.

Many more sighted peers than legally blind respondents are currently married, as can be seen in Table 5 (73% vs. 54%). Conversely, legally blind respondents are more likely than sighted peers to be single and, in particular, to have never married (28% vs. 14%). The totally blind respondents are the most likely of all to have never been married (33%).

As one would expect under the circumstances, more legally blind respondents live alone as compared to sighted peers (29% compared to 17%), and fewer live in relatively large households with four or more people (15% compared to 24%). In addition, legally blind respondents, especially those who are totally blind, are less likely to live in households that include children (19% compared to 38%). The household composition of the two samples also differs in that legally blind respondents are more likely than sighted peers to share their homes with a blind person. Among those in multiperson households, 20% of the legally blind respondents, but only 6% of the sighted peers, live in households that include another legally blind person. Usually these legally blind respondents are married to a blind person (12%), but this is true for only 2% of sighted peers. The fact remains, however, that most respondents (legally blind or sighted) do not live with a legally blind person.

Table 5. Marital Status and Household Characteristics

Marital status and household characteristics	Vision status: Totally blind (%)	Visually impaired (%)	Legally blind (%)	Sighted peers (%)
Marital status				
Currently married	52	55	54	73
Not currently married	14	20	18	13
Never married	33	26	28	14
Total	100	100	100	100
(Base N)	(63)	(141)	(204)	(143)
Household size				
Lives alone	35	26	29	17
Two people	43	36	38	42
Three people	11	22	18	17
Four or more people	11	17	15	24
Total	100	100	100	100
(Base N)	(63)	(143)	(206)	(144)

Table 5. Marital Status and Household Characteristics (continued)

Marital status and	Vision status: Totally blind (%)	Visually impaired (%)	Legally blind (%)	Sighted peers (%)
Household composition				
Lives alone	37	27	30	19
With only children	3	2	3	2
With only adults	51	51	51	42
With both children and adults	8	20	16	36
Total	100	100	100	100
(Base N)	(59)	(136)	(195)	(132)
If lives with others, other legally blind people in household				
Spouse	18	10	12	2
Child	5	4	4	3
Other	---	6	4	3
None	78	80	79	94
Total	100	100	100	100
(Base N)	(40)	(106)	(146)	(118)

Other Social Characteristics

Considered next are three characteristics of varying nature: the first is demographic (race); the second, disability-related (nonvisual disability); and the third, contextual (type of community of residence). They are grouped here because they are all potentially relevant to the time and money expenditures under study, yet none was a sample selection factor (therefore not suitable to include in Tables 1 or 2).

Each of the three characteristics is a source of socioeconomic advantage or disadvantage, depending on the category. Evidence from the general United States population shows that greater economic resources are associated with being, respectively, white, less disabled, or a resident of a metropolitan center (U.S. Bureau of the Census, 1987).

Race. The proportion of whites in the sample of sighted peers is slightly higher than in the legally blind sample (94% vs. 86%) (Table 6). This undoubtedly reflects the lower rate of referrals from nonwhites, although the study made no attempt to match on race.

It is noteworthy that the percentage of nonwhites is lower in both the legally blind and sighted groups than expected from general population data. The prevalence of blindness is much higher among blacks than among whites (Tielsch, Sommer, Witt, Katz, & Royall,

1990). Therefore, one would expect nonwhites (mostly blacks, but also including Native Americans and Asians) to account for a substantially higher portion of the blind population than of the general (sighted) population, in which they are 16% (U.S. Bureau of the Census, 1987). The fact that nonwhites are less than 16% in this legally blind sample may reflect very low employment rates among nonwhite legally blind people and/or their lesser involvement in the organizational sources from which the sample was drawn.

Nonvisual disability. Respondents were asked whether they had any health problems other than visual ones which affect their "work or other daily activities." As with race, the disability findings in Table 6 show a slight difference between the legally blind and sighted sample groups, with more of the legally blind group reporting a nonvisual disabling condition (20% vs. 12%). Especially for the legally blind group, but also for the sighted group, the rate of nonvisual disabling conditions is less than would be expected from general population studies, and reflects selection on the basis of participation in employment (Kirchner, 1988; LaPlante, 1988).

Many specific conditions were mentioned by both groups, mainly chronic controllable conditions, e.g., hypertension, arthritis, back problem, etc. The difference between the legally blind and sighted groups mainly reflects the fact that several legally blind people named systemic conditions (notably diabetes) which are the cause of their blindness and also have other limiting consequences. Although the severity of nonvisual conditions was not asked, legally blind respondents who had any such condition named multiple diagnoses slightly more than did sighted peers with disabling conditions, suggesting that the former group was more severely affected.

Type of community of residence. In contrast to the small differences found in race and nonvisual disability, the vision status groups differ considerably in their community context, specifically in the percentages who are urban dwellers. A substantial majority of the totally blind sample (62%) lives in a large city, compared to 50% of those who are visually impaired, and just under two-fifths of the sighted sample (39%). The much lower city-based proportion among sighted peers is offset by their slightly higher proportions in each of the other community types rather than in any one type: Sighted peers are slightly more likely than both subgroups of legally blind respondents to be found in suburbs, small towns, and rural or farming communities.

The urban concentration of legally blind people seems to reflect an important constellation of factors related to their employment and broader social participation. Before discussing why that may be so, it is necessary to reject the alternative possibility that this finding simply reflects a pro-urban bias of the sampling strategy. In fact, both lists from which the sample was drawn are maintained by metropolitan-based organizations. Nevertheless, there is no reason to believe that the national recruitment methods for those lists favored urban dwellers, beyond the employment-related factors that are also central to the interpretation to be developed below. That is, the organizations developed their lists through contacts with rehabilitation agencies and organized consumer groups; the purpose of the lists attracted legally blind people with more formal education and those who are employed. To that extent, the urban concentration in this sample probably is characteristic of employed legally blind persons.

Table 6. Other Characteristics: Race, Nonvisual Disabilities, Type of Community of Residence

Other characteristics	Vision status: Totally blind (%)	Visually impaired (%)	Legally blind (%)	Sighted peers (%)
Race				
White	86	86	86	94
Nonwhite	14	14	14	6
Total	100	100	100	100
(Base N)	(66)	(147)	(213)	(145)
Nonvisual disabilities				
Yes	15	22	20	12
No	85	78	80	88
Total	100	100	100	100
(Base N)	(66)	(147)	(213)	(145)
Type of community of residence				
City	62	50	54	39
Suburb	25	28	27	32
Small town or village	10	15	13	20
Rural or farming community	3	6	5	8
Total	100	99	99	99
(Base N)	(63)	(139)	(202)	(143)

Urban concentration among employed legally blind people can be explained by several interrelated factors: Large cities offer more rehabilitation services and more employment opportunities. The latter is true in part because large firms are more willing than small firms to hire and retain legally blind persons (Kirchner & Harkins, 1991). Undoubtedly, public transportation options in larger cities are an important factor in residential choices of legally blind persons who are employment-oriented.

Assuming this explanation of urban concentration holds true for the legally blind sample, the next question is whether the contrast with the sighted sample is representative of the larger picture. In fact, the sample matching strategy of naming a friend or relative might be expected to minimize community difference since it promotes naming people who are in the referrer's community. That such a large difference in community type nevertheless emerged between the legally blind and sighted samples suggests there may be an even larger difference in the general populations of employed legally blind and sighted people; census data support that conclusion. Among employed adults in 1980, 30% lived in urban centers, 34% suburbs, 12% small towns, and 24% rural places (U.S. Bureau of the Census, Table 103, 1983). In any case, the greater concentration in cities of legally blind groups than sighted groups seems relevant to many of the findings presented below on income and expenditures and on time use.

Vocational Rehabilitation Services

The topic of respondents' receipt of vocational rehabilitation services is particularly pertinent because the study aims to use the findings to draw implications for evaluating and improving vocational rehabilitation services. Vocational rehabilitation has long been based on a philosophy of working with the "whole person," recognizing that employment capacity depends in part on broader psychosocial adjustment and, in turn, employment promotes that broader objective. In practice, vocational rehabilitation often has been narrowly focused, responding to a bureaucratic incentive system that rewards rehabilitation workers only for establishing a client in some type of vocational role (including unpaid "homemaker"); furthermore, staff and other resource constraints discourage devoting attention to a broad conception of clients' social participation. Recently, evidence of broader practice is emerging in the form of "independent living services" which may be provided to employment-oriented clients (such services are usually targeted for elderly or other nonvocational clients). Comprehensive documentation of life activities, as provided by the time-use methodology of this study, offers a resource to enhance the broader scope of rehabilitation practices.

The present study design allows only limited exploration of the effect of vocational rehabilitation experience on time-use patterns. The sample design assumed that the great majority of legally blind respondents would have had vocational rehabilitation experience. (This expectation was supported by the findings in this study.) In general, their vocational rehabilitation experience would have occurred many years before, limiting their ability to recall details of the type and intensity of services. Furthermore, the long time since receiving vocational rehabilitation services means that later experience might obscure the effects of vocational rehabilitation.

Table 7 summarizes the results from the section of the interview that covered vocational rehabilitation (asked only of the legally blind sample). Nearly all totally blind respondents recalled receiving services (97%), as did the overwhelming majority of visually impaired respondents (87%).

Because the interview specified "services from the state vocational rehabilitation agency," the few people who responded in the negative may have received services from a private agency. In some states, services are typically provided through private agencies under contract to the public program; clients may not be aware of this payment arrangement. In general, it is difficult to gather precise survey data about vocational rehabilitation services because clients often do not perceive services according to the terminology that service providers use. However, respondents probably were more able than the average client to respond to vocational rehabilitation service questions, by virtue of having had some involvement in blindness organizations (given the sampling sources) and relatively higher education.

Table 7 lists the service category designations that were included in the interview, but their order is altered slightly in order to show broader groupings of types of services. Although the heading "vocational" is used to cover training, testing, and placement services, it should be understood that other services, notably purchase of devices, are also justified by their vocational application.

Among respondents who reported receiving state vocational rehabilitation services, the most frequent type was eye examination (72% of legally blind), probably related to establishing eligibility for vocational rehabilitation services. This service was mentioned by somewhat more of the visually impaired (77%) than the totally blind group (64%) whose prior documentation of visual status was more likely to be definitive.

Counseling services were reported by about two-thirds of each group. That is probably a gross underreport; virtually all clients receive some counseling during the vocational rehabilitation process. Clients may not always have recognized the counseling component of conversations with their assigned worker; furthermore, some clients may avoid acknowledging that service because of stigmatized associations to the term *counseling*. Counseling could be a major factor in encouraging clients' fuller social participation, but it would require a separate study to explore whether and how counseling strategies have a discernible effect on time-use patterns. Independent living services are reported by only one-third of the legally blind sample (43%, totally blind; 29%, visually impaired). These services also are subject to underreporting, in part because the term is of more recent vintage than of many people's service experiences. Also, the provision of these services, usually occurring in the client's home, may appear so informal as not to be recognized as services. However, it is also possible that independent living services were indeed rarely provided to this sample because such services were often reserved for elderly or nonvocational clients. Whereas counseling might provide encouragement, independent living services might provide adaptive techniques for participating in a broad range of social activities, including domestic, civic, and recreational

Table 7. Receipt of State Vocational Rehabilitation (VR) Services

Vocational rehabilitation services	Vision status: Totally blind (%)	Visually impaired (%)	Legally blind (%)
Percent who ever received state VR service	97	87	90
(Base N)	(66)	(147)	(213)
If received state VR, type of service (Base N)	(64)	(128)	(192)
Medical/optometric			
Physical examination	55	63	60
Eye examination	64	77	72
Eye surgery	10	8	9
Medication	10	8	9
Counseling	64	68	67
Independent living services	43	29	33
Vocational			
Vocational training or college assistance	80	62	68
Vocational testing	66	62	63
Job placement	51	46	47
Purchase of devices			
Large equipment	54	51	52
Small equipment	20	14	16
Optical aids (e.g., glasses)	7	51	37
Mobility aids	71	51	58
Travel costs and other services			
Travel costs	38	40	39
Other services	12	10	10

The set of services under the vocational heading is probably more often reliably reported, although job placement sometimes may not be recognized as such by clients. It is ironic that the most successful job placement service is least likely to be acknowledged because the client has been subtly assisted to take a self-directed role in finding a job. Nevertheless, job placement is reported by about one-half of each subgroup. That might seem quite high, in view of recent critiques of the vocational rehabilitation system which focus on the need for more attention to job placement activities (Kirchner & Harkins, 1991; Miller & Rossi, 1988). However, the results are consistent with such critiques, since this sample was selected on the basis of having achieved employment. Vocational testing is reported by similar percentages of the totally blind and visually impaired groups, about three-fifths of each.

About two-thirds of the legally blind sample report vocational rehabilitation assistance in vocational training or attending college. The percentage is much higher among totally blind clients (80%) than visually impaired clients (62%), probably because the latter group averaged later onset of visual loss. Attaining a college degree is clearly considered by the vocational rehabilitation system to be an important route to achieving a vocational objective, and one would also expect broader psychosocial benefits. A special topic of analysis reported in the "The Impact of Education" section supports that expectation, but raises concern that legally blind people are disadvantaged relative to sighted peers in the payoff from a college education.

The category "purchase of devices" includes items that probably facilitate a broad range of nonvocational activities, although their justification is primarily to achieve an approved vocational goal. In practice, clients may be required to pay part or all of the cost of devices. Broad applications apply especially to optical aids (relevant for 51% of the visually impaired respondents; the small percentage of totally blind people who received optical aids may have had some vision during the vocational rehabilitation process) and mobility aids (especially relevant for totally blind respondents (71%), but also for 51% of the visually impaired respondents).

Other devices (referred to in the interview as "large or small equipment") purchased with vocational rehabilitation funds are also closely tied to obtaining or maintaining a specific job. *Large* versus *small* equipment was not operationally defined, but respondents apparently readily grasped the distinction, probably using cost as a major basis for classification. Large equipment generally refers to computer-related devices; small equipment includes some types of adaptive tools. Just over half of each subgroup received assistance in acquiring large equipment. Much smaller percentages received assistance in purchasing small devices (20% of totally blind respondents and 14% of visually impaired respondents). Findings presented in the "Barriers and Facilitators" section highlight the importance of this type of vocational rehabilitation assistance.

Thirty-nine percent of the legally blind respondents received reimbursement for travel costs related to vocational rehabilitation. An assortment of other services was received by 10% of legally blind respondents.

Income

Detailed information on the income and expenditures of blind people and their families is greatly needed but difficult to obtain, as confirmed by the pretest of this study. Faced with a necessary choice of emphasis, the researchers opted to subordinate the topic of finances in order to develop the more innovative topic of time use. That decision is consistent with the recent thrust of consumer-driven services and research toward concern with quality-of-life

issues, i.e., social participation.

Therefore, the degree of detail this study gathered on money matters was sharply reduced from the original plan. The pretest showed that providing dollar information as detailed as the time diary information posed an undue burden on respondents; furthermore, respondents often could not recall, or never knew, precise dollar items. The income estimates shown in Table 8 are rough approximations; they should be viewed simply as benchmarks for examining group differences in relation to categories of expenditure and time use, rather than as precise measures in their own right. Monthly household income categories in Table 8 combine categories in the original questionnaire. Reasons for caution include the following:

1. Respondents were asked to estimate household income from all sources, rather than individual income. Estimates were made in response to a survey question, rather than by the diary method or by reference to documents.

2. About 10% of the sample in each vision subgroup did not provide income data. Approximately three percent refused this information; others either did not know or did not complete the final interview, which contained the income question.

3. Monthly income was reported within ranges of $500, up to $3,500 or more. Monthly rather than annual income was asked, to promote accurate recall, especially as related to questions about expenditures. 4. Category midpoints were used to compute averages. Choosing a value to represent the highest category, $3500 or more, is especially problematic. In retrospect, a higher cut-off should have been used, since nearly 20% of sighted respondents, and 15% of legally blind respondents, fell into the top income category.

Three statistical approaches were used to deal with responses above $3,500. First, all cases in the top category were assigned a value of $3,750 (this assumes maximum monthly household income of $4,000 or annual income of $48,000) which undoubtedly was exceeded by some respondents. For 1988, the Census Bureau estimated that more than 20% of United States households had annual incomes over $50,000 (U.S. Bureau of the Census, Table 716, 1990).

Second, assuming that some respondents' household monthly income exceeded $4,000, three values above $3,500 were assigned: $3,750, $4,250, $4,750. To decide how many cases to assign to each value, the percentage distribution of cases in the three preceding categories (midpoints of $2,251, $2,751, $3,251) was applied to cases in the $3,500 or more category. This procedure raised the group averages and also increased the gap between the legally blind and sighted groups, but only slightly.

Finally, to avoid the problem of the unknown distribution of higher incomes, median household incomes rather than mean household incomes were calculated.

It appears that the sample matching procedure of selecting relatives or friends had the intended effect of yielding legally blind and sighted samples with similar economic status, as measured by household income. Even so, the evidence suggests a less favorable economic situation for those who are legally blind than for those who are sighted (no difference between those who are totally blind vs. visually impaired). Two-fifths (41%) of the legally blind group had monthly household incomes of $1,500 or less, compared to only one-fourth (26%) of the sighted group (Table 8). The gap between the groups at the upper end was smaller: 21% of the legally blind group had household incomes over $3,000 compared to 29% of the sighted group.

Table 8. Aspects of Household Income

Household income	Vision status: Totally blind (%)	Visually impaired (%)	Legally blind (%)	Sighted peers (%)
Monthly household income categories				
$1500 or less	40	42	41	26
$1501 - $3000	40	36	37	46
$3001 or more	19	22	21	29
Total	100	100	100	100
(Base N)	(57)	(132)	(189)	(131)
Average household income in dollars:				
Mean monthly (method 1)	1,953	1,929	1,936	2,220
Mean annual (method 1)	23,436	23,148	23,232	26,640
Mean monthly (method 2)	2,005	1,990	1,997	2,304
Mean annual (method 2)	24,064	23,874	23,964	27,648
Median monthly	1,875	1,833	1,865	2,280
Median annual	22,500	21,996	22,380	27,360
Income from government sources:				
% with any gov't sources	34	40	38	9
No income from gov't sources	67	60	62	91
Income from 1 gov't source	26	31	30	9
Income from 2 or more gov't sources	8	9	8	0
Total	100	100	100	100
(Base N)	(66)	(147)	(213)	(145)
Mean monthly benefits including nonrecipients of gov't sources	136	168	158	37
If receiving government sources, mean monthly benefits in dollars	408	441	431	489
Government sources (key eligibility indicators)				
SSDI (low or no earnings, disability)	21	31	28	1
SSI (poverty, disability)	14	13	13	2
Veterans' assistance	--	1	1	3
State or local gov't (poverty)	6	1	3	1
Vocational rehabilitation (disability)	2	1	2	--
Other	--	4	2	1

Mean incomes are shown next, on a monthly and an annual basis. Both methods of dealing with the open-ended upper category are shown in Table 8 (Methods 1 and 2). The gap between the legally blind and sighted groups is about $300 on a monthly basis and about $3,600 on an annual basis.

Means as averages are susceptible to distortion by a few high values; medians better reflect distributions across income categories. The gap in monthly median income between legally blind and sighted groups is over $400 or nearly $5,000 annually.

Shown next in Table 8 is the part played by government income benefits. Not surprisingly, legally blind respondents are much more likely to report any such sources than are sighted respondents. Nearly two-fifths (38%) of legally blind respondents report income benefits, compared to merely 9% of sighted respondents. Each of the few sighted beneficiaries reports only one source, as do most legally blind beneficiaries.

The average (mean) monthly amount of government benefits including nonrecipients is $158 for legally blind respondents (slightly higher for visually impaired respondents, lower for totally blind respondents) and only $37 for sighted peers. This comprises about eight percent of total household income for the legally blind subgroups and two percent for the sighted group (not shown). Average amounts calculated for beneficiaries are higher, of course. Interestingly, they are highest for sighted recipients, who report Veterans' benefits as their main source ($489 compared to $431 for legally blind recipients; $408, totally blind recipients; $441, visually impaired recipients).

Among legally blind beneficiaries, Social Security Disability Insurance (SSDI) is reported most frequently (28%, up to 31% in the visually impaired group). SSDI mainly serves former employees, but eligibility may be retained with employment if earnings are below a cut-off point. Supplemental Security Income (SSI) is reported by about half as many legally blind respondents as report SSDI (13%); also, 3% report state/local government benefits (6% of the totally blind group). Receipt of SSI or state/local benefits indicates that respondents' households qualified on the basis of poverty.

Discussion of Income Findings

The next task is to begin to place the income data into context. This is a step toward constructing an answer to the complex research question: What are the economic costs of legal blindness from the perspective of a legally blind person (with employment experience) in his/her family or household situation? Because income and expenditure data were collected about households rather than for individuals, the findings must be considered in relation to household size and composition.

As shown earlier, legally blind respondents live in smaller average-size households than sighted respondents. A preliminary way to consider these data is in terms of per capita income, although that can be misleading, as will be shown. Dividing median household size into median income (Tables 5 and 8), the result for household members in the legally blind group is $1,196 per month, which is $84 per month *less* per person than for household members of the sighted group ($1,280 per month, not shown). Note, however, that this result masks a large difference between the totally blind and visually impaired subgroups: The former group shows an *excess* of more than $100 per month per person compared to the sighted peers, whereas the visually impaired group shows an income *deficiency* almost twice as large ($189 per month per person less than the sighted group).

The following observations from other parts of the data modify, if not override, the apparent income advantage of the totally blind employed sample relative to the visually impaired group and even to the sighted peers. This is not to downplay the evidence that some blind workers have attained a comfortable economic situation that is at least comparable to that of many sighted workers (Kirchner, 1988).

Several indicators suggest that the income situation among both legally blind subgroups is more precarious than for the sighted peers. First, more of the legally blind people who had been employed when selected for the study were no longer employed by the time of the first interview a few months later (especially totally blind people). Relative job insecurity is underlined by the continuity-of-work pattern shown in Table 4: Half as many totally blind as sighted respondents have been employed for 75% or more of their adult lives (i.e., since age 18); the gap is smaller but substantial between the visually impaired and sighted groups. Also, the legally blind groups (again, especially the totally blind group) depended more on government income sources that indicate poverty or low earnings.

Sighted respondents are much more likely to live with a spouse and young children than are totally blind respondents, and considerably more so than visually impaired respondents; conversely, both legally blind subgroups are more likely to be in households with two or more adults and no children. One can infer that in sighted respondents' households, one spouse is not working, or is working part-time, but that both adults in blind respondents' households are working. If true, given similar though lower average incomes of the latter, this suggests lower salaries for legally blind workers in this study (who are well-matched to the sighted workers on occupation and education). Some of this speculative interpretation can be assessed in future multivariate analysis.

Barriers and Facilitators: Reading and Mobility/Transportation Issues and the Role of Technology

As emphasized in the "Introduction" section, the barriers that legal blindness poses to reading and mobility were identified as major issues in maintaining mainstream lifestyles, that is, patterns of activities that are comparable to those of sighted people with similar demographic characteristics (including socioeconomic status). The next two sections, therefore, deal in considerable detail with the issues of reading and mobility. *Mobility* is the term used to describe the unique needs of legally blind people for getting around; when these needs shade over into those shared by sighted people, the issue is posed as *transportation*.

Following the sections on reading and mobility/transportation is a section on technology use. Technology may provide a major resource to meet the challenges of reading, mobility, and other activities in the workplace and outside it. Findings on technology use appear in the reading and mobility sections as well, but this section will focus on technology use more broadly.

How Reading Is Done

In sharp contrast to the taken-for-granted and typically solitary quality of reading by sighted people, the process of reading by legally blind people may entail complex preparation regarding when, where, how, and what to read, and frequently involves another person (i.e., a reader), becoming a social rather than solitary activity.

In designing this study, attention was given to the difference in the reading process of

legally blind and sighted people by (a) devoting an extensive section of the interview specifically to that topic (most questions applied only to legally blind respondents) and (b) adding a category to the coding scheme for time diary activities to cover "reading with talking books, other recorded materials for the blind" (existing categories to cover time spent reading magazines, newspapers, and other reading were used by legally blind and sighted respondents).

How do employed legally blind people overcome the barrier of print-reading? Some with usable vision use print, albeit with varying degrees of difficulty. Table 9 shows that close to half (44%) of visually impaired respondents (30% of the entire legally blind sample) use regular print. That figure is notably higher than the 23% of visually impaired respondents (shown in Table 1) who reported they are able to "see clearly small things such as ordinary print"; apparently, the importance of ready access to print is stimulus enough to read it even with difficulty. Also, some legally blind people who use regular print do so with the assistance of magnifying devices, notably the CCTV (reported by 37% of visually impaired respondents), or with special high intensity lighting (28%). Large print is used by a majority of visually impaired respondents (61%). For the few visually impaired persons who are able to clearly see ordinary print, a very limited field of vision may restrict reading ability. In any case, nearly all the visually impaired sample use one or more nonprint methods of reading.

Table 9 shows the large variety of both print and nonprint methods that both subgroups use in order to read, listed in declining order of frequency for the combined legally blind group. Most people use more than one method. The several categories with a large difference between totally blind and visually impaired subgroups directly reflect whether individuals have any usable vision. Several methods, however, are used about equally by both groups.

Cassettes or record players are the most frequent, in fact nearly universal, method for both the totally blind and the visually impaired groups (99% and 93%). This method (specifically cassettes) permits reading in varied settings, is inexpensive, and requires little or no training. However, tape reading requires complex arrangements to obtain the recorded materials. Many respondents arrange to have their own readers record materials for later listening; obtaining other recorded materials requires finding out where they exist, ordering them on loan, waiting for receipt, and returning them to the specialized organizations or libraries.

Next in frequency is the use of readers, used by nearly all of the totally blind respondents (97%) and most of those who are visually impaired (75%). Qualitative data from two focus groups conducted in advance of the survey offered intriguing insights into the social interactional issues that accompany working with readers. For example, besides obvious concerns about scheduling when and where to meet and organizing materials to be read, the legally blind person must deal with control issues such as guarding against some readers' intrusiveness into personal matters; maintaining control over what is skimmed or read in depth and being vigilant that a reader does not arbitrarily decide not to read certain things in a pile of mail; and the need to evaluate and, if necessary, train readers for competence with technical materials. These and other aspects of the reader relationship deserve a full-scale study in themselves.

Table 9. Methods of Reading

Methods of reading	Vision status: Totally blind (%)	Vision status: Visually impaired (%)	Legally blind (%)
Cassettes, record players	99	93	95
Readers	97	75	82
Braille	99	57	70
Large print	--	61	42
Voice output computer	41	34	36
Regular print	--	44	30
CCTV	--	37	26
Braille output device	30	24	26
High intensity lighting	--	28	19
Optacon	26	5	11
Ordinary magnifiers	2	41	29
(Base N)	(66)	(147)	(213)

For the present study, earlier focus group discussions led to including interview questions on some of the time and cost dimensions of working with readers; the results are described below. Unfortunately, even with the heavy focus on reading issues, time constraints of the study limited investigation of the more subtle ways that working with readers (and other reading methods) shapes the social experience of blindness.

Braille is the method mentioned next in frequency, almost universally among the totally blind sample (99%) and by a majority of the visually impaired group (57%). This level of braille usage (which requires intensive training, is cumbersome, and is constrained by the supply of materials in braille) is very high compared to most estimates for the general legally blind population. Berkowitz, Hiatt, deToledo, Shapiro, and Lurie (1979) found that about 40% of totally blind persons in a national sample covering all ages, used braille as a reading method and 10% of all legally blind respondents used braille. The high level is especially striking in view of concerns about declining use of braille in early education of legally blind people (Spungin, 1990). This study's data support the importance of braille literacy in the employability of legally blind persons. For example, a recent study showed that within three categories of vision deficit ("no useful vision," "a little useful vision," and "considerable useful vision"), those who were employed were much more likely to use braille than those who were not employed but wanted to be employed (Kirchner & Harkins, 1991). The levels of braille usage among the employed blind people in that study closely matched the levels in the present study.

The next methods involve high technology and are used for reading by a minority of respondents. The specific methods include voice output computer devices (36%), braille output devices (26%), and, even more rarely, the Optacon (11%). The relatively low rate of usage of these methods probably reflects their high costs, although in the case of the Optacon the issue is more likely the training required to become proficient. Each of these technologies offers great potential to expand legally blind persons' access to more types of reading materials and to efficiencies in reading with less reliance on the vagaries of readers. Nevertheless, concern is emerging that increasing importance of graphics in computer-based applications will pose new obstacles to legally blind persons' reading. The graphics problem applies especially to use of speech synthesizers.

Social Aspects of Reading

Table 10 suggests that, whatever the difficulties, reading is a vital part of the lives of employed legally blind people. Nearly all of the sample report that they do some reading at home, as do all of the sighted peers. A great majority of the legally blind group also report reading at work (72%), but this percentage is notably lower than reported by sighted peers (86%). Even that contrast is probably understated: Sighted respondents who said "no" probably overlooked much incidental reading at work (notices, instructions, etc.) which they take for granted, but which is unavailable to legally blind people without making specific arrangements.

Other settings for reading highlight differences in the social circumstances of reading for legally blind and sighted people. Over one-fifth of the legally blind sample (22%) do some of their reading at an agency for the blind. To do so requires planning, travel, and a set of relationships within the agency that may have implications for other activities. The number of respondents who provided estimates for questions about frequency of agency reading visits and travel time is too small to report.

Both legally blind and sighted samples reported a large variety of other settings for reading, in response to an open-ended question. Among legally blind respondents the most frequent was "someone else's home" (about 20%); that location was extremely rare (3%) among sighted respondents (not shown). Going to someone's home (usually a friend or relative) with the objective of reading is quite different from purely social visiting, but may also promote the latter. Reading in school was mentioned by only 10% (fewer of the sighted sample mentioned school, since fewer were currently engaged in educational activities). By contrast, sighted respondents most frequently mentioned "travel" and "waiting" as other settings for reading. Although a few legally blind people mentioned those settings, it is clear that for sighted people the convenience of reading permits them to more readily use transitional time periods to good advantage to expand their reading. Finally, both groups mentioned church as another setting for reading to about an equal degree (15% to 20%).

Table 10. Social Aspects of Reading

Social aspects of reading	Vision status: Totally blind (%)	Visually impaired (%)	Legally blind (%)	Sighted peers (%)
Where reading is done				
(Base N)	(64)	(110)	(174)	(145)
Home	95	94	94	100
Work	72	73	72	86
Agency for the blind	17	26	22	--
Other places (other person's home, travel, waiting)	25	31	29	50
Readers used for:				
(Base N)	(64)	(110)	(174)	--
Mail/monthly bills	92	68	77	--
Work/career	67	66	66	--
Pleasure	77	56	64	--
Current events	64	62	63	--
Education in career field	58	56	56	--
Religion	22	32	28	--
Other school/classes	25	28	27	
Readers who are:				
(Base N)	(64)	(147)	(213)	--
Paid	30	18	22	--
Family members	70	56	60	--
Friends/neighbors	70	42	50	--
Other volunteers	44	31	35	--
Co-workers	58	48	51	--

Table 10. Social Aspects of Reading (continued)

Social aspects of reading	Vision Status: Totally blind (%)	Visually impaired (%)	Legally blind (%)	Sighted peers (%)
Percent ever recruited reader	64	48	54	--
(Base N)	(64)	(110)	(174)	--
If recruited, number of weeks it took on last occasion:				
1 week or less	64	62	63	--
More than 1 week up to 4 weeks	31	32	32	--
4 weeks or more	5	6	6	--
Total	100	100	100	--
Percent ever spent time training reader				
(Base N)	44	37	40	--
If trained, hours spent training on last occasion	(64)	(110)	(174)	--
1 hour or less	42	31	35	--
2 or 3 hours	15	33	26	--
4 - 7 hours	4	21	14	--
8 hours or more	39	15	25	--
Total	100	100	100	
(Base N)	(66)	(39)	(65)	
Percent regularly spend time arranging for sessions	44	29	35	--
(Base N)	(64)	(110)	(174)	--
If spend time, usual hours/month spent arranging				
1/2 hour or less	37	52	45	--
More than 1/2 hr. through 2 hr.	48	41	45	--
More than 2 hours	15	7	11	--
Total	100	100	100	--
(Base N)	(27)	(29)	(56)	--

Table 10. Social Aspects of Reading (continued)

Social aspects of reading	Vision status: Totally blind (%)	Visually impaired (%)	Legally blind (%)	Sighted peers (%)
Length of typical reading session				
1/2 hour or less	44	53	50	--
More than 1/2 hr. through 1 hr.	19	24	22	--
More than 1 hr. through 2 hr.	23	20	22	--
More than 2 hours	13	3	6	--
Total	100	100	100	--
(Base N)	(63)	(109)	(172)	

Table 10 shows seven types of reading that are done with a reader, listed in declining order of mention by the combined legally blind group. The order is closely similar for the two subgroups. Most frequent is the use of readers for mail/monthly bills (92% of the totally blind group; 68% of the visually impaired). This type of material is least suited to reading by high technology methods. Although it can be done on a CCTV, the much lower percentage of readers used by the visually impaired group may reflect the more frequent presence of another adult in the household to handle the bills and other mail.

Using readers for work-related material is reported equally by both subgroups (66%). This This usage may be considered along with the high levels of reported use of readers for work-related education (56%). Pleasure reading is second in frequency for totally blind respondents (77%); many fewer, although a majority, of visually impaired respondents use readers for this purpose (56%). At a level close to work-related reading, both groups use readers to help keep up with current events (63% of each group). Other uses, similar for both groups, are for religion (28%) and for noncareer educational purposes educational purposes (27%).

The next section focuses on several aspects of working with readers. Only a minority of the users work with readers who are paid (22%); even those who do usually also use family members (60%), friends/neighbors (50%), and/or other volunteers (35%). Use of paid readers may be a way to avoid being dependent on the uncertain skills, schedules, and good will of volunteers. Many of those who use unpaid readers maybe deterred by the costs, recruitment, scheduling, and training burdens involved in employing readers. Over half of the legally blind respondents (51%) depend upon co-workers as readers. Just over half (54%) of the legally blind respondents have ever spent time looking for a reader; the last time they did so, the majority (63%) succeeded within one week. Only 6% took about a month or more.

Nearly 40% have spent time training a reader; of those, over one-third (35%) spent one hour or less the last time, whereas one-fourth (25%) spent well over the equivalent of a full workday (8 hours or more) doing training.

Fewer legally blind respondents (35%) regularly spend time in scheduling and the great majority (90%) estimate less than two hours per month is spent in scheduling.

Of course, the flip side of avoiding those burdens may be overdependence on whoever is willing to read, with whatever skills they may bring, whenever and wherever they are willing to do so. Although short reading sessions may sometimes be desired by legally blind users, the fact that a majority (50%) report that the typical length of their sessions with readers is one-half hour or less may for some reflect dependency on the schedules of various people.

Dollar costs associated with use of readers are covered in the section on expenditures. To anticipate the discussion on time diary measures concerning reading, it appears that the measures may not have been sensitive enough to identify all of the reading-related issues. For a notable example, unfortunately, it is not clear how much time at work was spent using various methods for reading, nor how much reading at home was for work-related tasks.

Mobility/Transportation

All of the totally blind respondents and 70% of the visually impaired group use at least one mobility device, and the majority of the former group use two or three (63%) (Table 11). To find a difference between the subgroups in reliance on mobility devices is not surprising. However, the difference is much larger than might be expected on the basis of the percentage of the visually impaired group who reported that they could not see "clearly at a distance, such as a friend across the street." According to Table 1, 87% could not see that well (93%, including those who said "sometimes"), whereas only 70% report using a mobility device. This discrepancy poses a question as to whether some of the visually impaired subgroup limit themselves in social activities because of reluctance to identify themselves as legally blind in public situations (Wainapel, 1989). This speculation cannot be explored further here because the number of cases who cannot see at a distance but do not use mobility devices is too small.

The percentage of legally blind respondents who use any mobility device at work is much smaller (53%) than those who use mobility devices to get to work (70%) or to travel around the neighborhood (82%). Only within the home does the use of mobility devices approach zero usage (2%). That is understandable because of familiarity within an enclosed place either at home or work.

Visual impairment is most meaningful to social participation if it presents problems in getting around in wider settings. All respondents were asked whether they have experienced problems in transportation due to their vision (or other health problems, for the sighted peers). The overwhelming majority of totally blind respondents (89%) report transportation problems that they attribute to their visual impairment, as do somewhat fewer (74%) of the visually impaired respondents (this is close to the percentage who use a mobility device); only 6% of sighted peers report health-related transportation problems. In each group, nearly one-third of those with problems say that problems occur only "sometimes" (not shown).

Interpreting these data requires sorting out quite different reasons that people with severe visual impairments might report that they have no problems. They may have reduced their ambitions for getting around to fit their limitations, they may have "solved" the problems (e.g., by living in a community with adequate accessibility provisions, by developing highly skilled adaptive techniques, by being in a household where someone is always readily available to help with transport, or a combination), or it may be that the nature of their vision problem is such that it does not, in fact, limit their mobility. Future analysis will be able to explore these alternatives to some extent.

The kinds of problems that the legally blind sample reported, in response to a suggested list dealing with modes of transport other than walking or private cars, are shown next in Table 11 (percentages are based on those who reported any problem). Most people who named any problem mentioned more than one. The most frequently mentioned problem (75%) is limited access to taxi service due to expense or unavailability. A large number of legally blind respondents mention problems of access to paid drivers, either due to inability to locate drivers (57%) or the expense of drivers (16%). Both modes of transport (taxis and paid drivers), when available, offer optimal personal control by the user, i.e., on-call, door-to-door service.

Next in frequency (52%) is the problem that public transportation is unavailable. That percentage works out to about 41% of the entire legally blind sample (including those with no transportation problem), which is close to the percentage who live outside cities (see Table 6). Community of residence is presumably an important condition of the extent of transportation problems for legally blind people. However, many of those who are in communities with public transportation report that it does not serve their needs: 30% of them say it is unreliable; a much smaller number (10%) complain that available public transportation is too expensive for them.

A substantial minority (29%) report that special van service for people with disabilities (called "Handilifts" in some communities) is unacceptable. However, as will be seen, many fewer of the sample use this service; the relatively low proportion naming this problem suggests that it has low salience rather than high acceptability. Finally, several people (21%) suggested other types of problems, the most frequent being problems with schedules of public transportation options, followed by inability to read needed information and the need to improve their own orientation and mobility skills.

Table 11. Aspects of Mobility and Transportation

Mobility and transportation	Vision status: Totally blind (%)	Visually impaired (%)	Legally blind (%)	Sighted peers (%)
Number of mobility devices used				
None	0	30	21	--
One	37	41	39	--
Two	57	26	36	--
Three	6	3	4	--
Total	100	100	100	--
(Base N)	(66)	(147)	(213)	--
Percent who use mobility devices at work	65	46	53	--
Percent who use mobility devices to get to work	75	66	70	--
Percent who use mobility devices at home	2	3	2	--
Percent who use mobility devices in neighborhood	92	76	82	--
(Base N)	(65)	(103)	(168)	--
Experienced transportation problems due to vision or health				
Yes	89	74	79	6
No	11	26	21	94
Total	100	100	100	100
(Base N)	(66)	(147)	(213)	(145)

Table 11. Aspects of Mobility and Transportation (continued)

Mobility and transportation	Vision Status: Totally blind (%)	Visually impaired (%)	Legally blind (%)	Sighted peers (%)
If experienced problems (Base N)*	(58)	(108)	(166)	--
Taxi service expensive or inaccessible	69	79	75	--
Can't locate paid drivers	53	58	57	--
Can't afford paid drivers	17	15	16	--
Public transportation not available	48	54	52	--
Public transport unreliable	29	31	30	--
Public transport too expensive	12	8	10	--
Handilifts/special vans unacceptable	28	30	29	--
Main method of transportation to work				
None/work at home	11	2	5	3
Drive yourself	--	--	--	80
Being driven	32	41	38	5
Bus or train	42	35	38	7
Walk	8	10	9	6
Special van/handilift	2	8	6	--
Taxi/other	6	4	5	--
Total	100	100	100	100
(Base N)	(66)	(147)	(213)	(144)

Table 11. Aspects of Mobility and Transportation (continued)

Mobility and transportation	Vision Status: Totally blind (%)	Visually impaired (%)	Legally blind (%)	Sighted peers (%)
Main method of transportation for errands:				
None	2	1	1	--
Drive yourself	--	1	1	91
Being driven	61	65	63	6
Bus or train	12	8	9	2
Walk	15	12	13	1
Special van/handilift	--	4	3	--
Taxi/other	11	9	10	--
Total	100	100	100	100
(Base N)	(66)	(147)	(213)	(144)

*Base N for sighted peers is too small for further analysis.

The remaining sections of Table 11 deal with the main methods of transportation that legally blind and sighted subgroups use to travel to work and to do errands. Note first, that in spite of the difference in use of mobility devices and community and household settings, between the totally blind and visually impaired subgroups, the two groups are remarkably similar in their patterns of transportation both to work and on errands. In regard to transportation to work, the two slight differences are consistent with differences in their settings. That is, slightly more of the totally blind group use "bus or train"; more of that group live in cities (Table 6). Slightly more of the visually impaired group report "being driven"; more of that group live with another adult (Table 2).

The striking, though not surprising, contrast in both types of transportation situations is between the legally blind and sighted groups: 80% of the sighted group drives themselves to work; none of the legally blind group does. Even more (91%) of the sighted group drive themselves on errands; 1% of the legally blind group does (the latter is possible with bioptic devices in some states under controlled conditions).

Since driving oneself is not a real option for legally blind respondents, how do they handle transportation needs? For travel to work, public transportation (bus or train) and "being driven" are of equal importance (38% each), together accounting for most solutions. The pattern shifts for nonwork transportation: Being driven assumes even greater importance (63%), whereas public transportation becomes much less significant (9%). Walking and using taxis become slightly more important for errands (13% and 10%, respectively) than for travel to work (9% and 5%).

The main message that emerges from these data is that legally blind people who are active in the labor force are able to use a variety of options to meet transportation needs, especially for getting to work, but are heavily dependent on other individuals for their less standardized travel needs, as in running errands.

Transportation is often cited as a major deterrent to legally blind persons' obtaining employment for which they are qualified. Obviously, by focusing on an employed group in this study, the effects of transportation barriers cannot be directly observed, since the study subjects have devised some type of solution (the time-use data shed some light on the adequacy of their solutions). However, an indirect hint at the effect of transportation constraints on careers is afforded by the fact that the legally blind sample has been in their current jobs, on average, for longer than the sighted group (in spite of closely similar age distributions) (See Tables 2 and 4). The point just made rests on two assumptions: (a) that job mobility helps in career advancement and (b) that the difficulty of making new transportation arrangements tends to keep legally blind people at a job where they have solved that problem.

Technology Use

Advances in adaptive technology, especially in so-called high technology devices (e.g., computers, electronic travel aids, and "talking devices") are often credited with opening the doors for legally blind people to work at a wide range of jobs, such as are represented in this sample. The prospect that new technologies and new applications for existing technologies will continue to emerge, indeed at an accelerating rate, gives hope not only that the variety of accessible jobs will increase, but also that higher proportions of legally blind people will enter employment.

Precisely because of the great promise of technology, concerns in the rehabilitation professions focus on the barriers to its widest use and to a lesser extent on its drawbacks.

Among the concerns are: high costs of acquiring and maintaining certain devices; negative attitudes of some potential users who may feel intimidated by the seeming complexity of learning to use some devices (older people and women are likely to have been socialized to believe they cannot cope with modern technology) or who shun devices that make them seem different; similar attitudes held by some employers; inadequate training resources; and exaggerated claims as well as the related danger that some simpler, serviceable devices or techniques will become obsolete to the detriment of people who could benefit from them.

Other concerns could be cited, but the aim here is simply to show that the role of technology in the lives of employed legally blind people raises complex questions. One can neither presume that all employed legally blind people are using technology to the same extent, nor what the effects of its use (or nonuse) are on their lifestyles, specifically their time and money budgets.

This study permits a glimpse at those issues, but is constrained by complexities in collecting and analyzing the data. A few words are necessary about the methodological difficulties. Initially, the goal was to collect very detailed data on adaptive devices used by the sample, including costs and sources of payment for each device and even data to learn which device was in use for each of the time diary activities. It became clear in the pretest that such detail, especially in conjunction with all the other topics under study, was overly burdensome. The issue became how best to structure efficient questions about devices and their costs, while adequately addressing the variety of types that are available. The second, related issue emerged in grouping the resultant data in order to classify technology users.

Both the data collection and analysis issues reflect the fact that the disability research literature has barely begun to work on conceptualizing and operationalizing socially meaningful distinctions in technology use. Specifically for this study, an effort to classify people as "high technology" and "low technology" users revealed varied criteria for doing so and little agreement among experts (including engineers and rehabilitation practitioners) who were consulted about the options. For example, if one wishes to identify high technology devices, should it be on the basis of (a) amount of training needed; (b) complexity of the engineering (some very complex devices require little training); (c) cost; or (d) some other factors? Similarly, should "heavy" and "light" users be distinguished by (a) the number of devices they use, of any type; (b) the number they use that are high technology; (c) the amount of time; or (d) the range of situations in which they use devices? Also, can and should technology use be classified by the settings for its application (work, household, education, etc.)?

For present purposes, the results will be presented with a minimum of analytic classification. Some results from a preliminary attempt to characterize "high," "medium," and "low" technology users will be summarized (McBroom, Kirchner, Nelson, & Giesen, 1990). Further work is clearly needed and possible with these data.

Table 12 shows the percentage of each legally blind sample group who reported the use of each of 20 types of devices, listed in declining order of frequency of mention by the combined legally blind sample. The category labels used in the table are generally abbreviated forms of the questionnaire item. (See Appendix B for the complete wording.) Note several things about the list. First, although it is quite comprehensive, it does not include any mobility devices (e.g., long cane or electronic travel devices) or some reading devices (e.g., Optacon or Kurzweil), treated separately in the prior sections. Undoubtedly, other devices were also omitted. However, some devices not specified would be included within one of the 20 categories. Some categories could include a great variety of specific devices (e.g., adapted

tools), while others refer to a unique device (VersaBraille).

Although vision is needed for a few of the devices (e.g., CCTV) those are not the ones most frequently used by the visually impaired group. The degree of vision seems to account for the substantial difference in frequency of mention of some items (e.g., adapted clocks or watches or handwriting aids), but many other categories are used to about equal extent by both subgroups.

Table 12. Type and Number of Categories of Adaptive Devices

	Vision status		
Adaptive devices	Totally blind (%)	Visually impaired (%)	Legally blind (%)
(Base N)	(66)	(147)	(213)
Category of devices			
Adapted cassette tape recorder	99	84	88
Adapted clocks or watches	97	67	76
Perkins brailler or slate and stylus	99	54	68
Talking calculator	80	48	58
Adapted recreational aids	76	41	52
Labeling aids	83	37	51
Adapted personal items	52	47	48
Handwriting aids	62	36	44
Computers	44	42	42
Magnifying equipment (not CCTV)	--	41	29
Adapted kitchen utensils	39	20	26
CCTV	--	34	24
Adapted kitchen appliances	30	19	23
Special lighting	--	32	23
Adapted tools	30	18	22
Adapted educational aids	4	14	11
VersaBraille	17	7	10
Adapted health care devices	8	4	5
Other health care devices	4	2	3
Money identifier	3	1	1

Table 12. Type and Number of Categories of Adaptive Devices

Adaptive Devices	Vision status: Totally blind (%)	Visually impaired (%)	Legally blind (%)
Number of categories used			
None	0	1	*
1 – 5	4	27	21
6 – 10	50	47	48
11 or more	46	25	31
Total	100	100	100

*Less than .5%

Besides differences in need due to amount of usable vision, two other factors seem to account for the lower frequency of mentions of other items: (a) differences in need based on activities that only some people engage in (e.g., kitchen utensils, 26%; educational aids, 11%; and health care devices, 5%); and (b) high cost of the item (VersaBraille, 10%, and money identifier, 1%).

The three categories that are most frequently mentioned, and almost universally, by totally blind people have applications in virtually all life situations, that is, for reading, writing, and telling time. Notably, they are all low technology devices. These include adapted cassette tape recorders, adapted clocks or watches, and Perkins brailler or slate and stylus.

The use of computers is of particular interest because of the expectation that computers will offer the most significant boost to employment opportunity of legally blind people. In this sample, slightly less than half of each subgroup report computer use (44% and 42%). That is slightly lower than among sighted respondents (49%, not shown). Totally blind computer users nearly all use speech output and many of them use braille output (data not shown); speech output is also used by most visually impaired computer users, but some use braille output and more use large print output. In the years since the data were collected (1988), however, many new computer products for legally blind people have been developed (e.g., PC-base scanners). Today, therefore, the use of computers might be much more common than these data suggest.

A simple count of the categories mentioned by individuals shows that virtually everyone in the sample uses at least one adaptive device. The overwhelming majority (96%) of totally blind respondents named six or more categories and nearly half (46%) named 11 or more. Visually impaired respondents were, as expected, much lighter users; however, 25% of them named 11 or more categories of devices (interestingly, 3% of the visually impaired group, but none of the totally blind, named more than 15 categories).

Clearly, among legally blind persons who are employed, and probably among all legally blind persons who have received any rehabilitation services, technology of some sort plays a role in their participation within their home or outside the home. It is equally clear that, among a group with employment experience (and taking into account differences in amount of usable vision), individuals differ widely in the types and number of special devices they

use. What background characteristics are related to patterns of technology use? What effects do those patterns of use have on individuals' activities?

As noted earlier, a preliminary analysis was conducted that classified the sample into three groups (high, medium, and low technology users) and also examined relationships with a set of demographic characteristics, controlling for vision status (McBroom, Kirchner, Nelson, & Giesen, 1990). The main finding is that among both the totally blind and visually impaired groups, higher socioeconomic status (education, occupation, and income) is related to high technology use. The causal direction of the relationship cannot be determined from these data. It is possible that higher technology use makes possible higher occupational status, both at the educational and hiring stages of preparation. Conversely, holding higher occupational status may facilitate technology use in several ways, such as employers' greater willingness to provide accommodations to higher status workers; higher earnings that permit more technology purchases; or higher educational levels that sustain confidence needed to learn how to use new technologies. Most plausibly, both causal patterns operate in a cyclical manner. That is, high users may gain an occupational advantage; in turn, a favorable occupational situation facilitates their increasing technology use. Notably, gender and age were not significantly related to the high-medium-low typology. Indeed, the (nonsignificant) age trend suggests that high technology is associated with older average age.

Discussion

This section has focused on the activity areas of reading and mobility/transportation, which in American society pervade and make possible full participation in the many other activities that constitute mainstream lifestyles and which pose unique challenges for legally blind people. The data show that in this sample of currently or recently employed legally blind people who vary in educational attainment and in occupational status, no one does *not* read or travel. Adaptive means of a great variety are available and are used to accomplish reading and mobility tasks; most individuals use multiple methods. Technology plays a part, but much of it is quite simple or low technology, and some of the solutions deal more with techniques than technology, generally involving social arrangements (such as working with readers). These findings anticipate that, given their social attributes and their *blindness skills*, the activity patterns of the legally blind sample should not deviate greatly from that of their sighted peers.

There is another barrier, however, that was not directly measured in the study, but whose effects may influence the lifestyle patterns to be documented through time use. Public attitudes that stigmatize or overprotect people who are legally blind are also a barrier. Of the many ways this barrier may affect legally blind people's lives, one that has been suggested in the demographic profile and will assume greater importance in the findings on expenditures and time use, is marital status. Even though the sampling strategy attempted to match household composition of the legally blind and sighted samples in terms of living alone or with others, the sighted sample is much more likely to be married and living with a spouse and with children. This fact has pervasive consequences for the vision status groups' economic and informal resources, as well as for their time use. Clearly, reading and travel skills, and technology that facilitates those skills and other tasks are important, but not all important.

Closer Examination of Education and Gender Issues

Thus far, the analysis has revealed many important demographic similarities between the legally blind respondents and the sighted peers. Particularly if the reader has not kept in mind that the sampling strategy aimed to maximize the social status similarity of the two groups, the impression might be that legal blindness entails few social and economic costs. This impression, however, would be deceptive. Early analyses of the background data disclosed two subtle, subgroup-specific, costs. First, a college education has less economic and psychological payoff for legally blind people than for sighted peers. Second, apparent demographic similarities between the two samples conceal the disadvantaged status of legally blind women.

These subgroup differences, which the following pages will describe in more detail, highlight the pitfalls of considering the consequences of legal blindness too narrowly. The assumption of some people that all legally blind people experience their disability in the same way neglects social differences that can shape the experience of legal blindness. These subgroup differences also highlight the advantages of using a sampling strategy that ensures the inclusion of people from subgroups of particular interest. Had the sample not been stratified on the basis of education and sex, it probably would have included too few people with limited education and too few women to conduct the analysis that follows.

The Impact of Education[2]

Promoting access to educational and occupational opportunities has been a traditional goal of blindness services. As an important foundation for upward mobility and life enrichment, education is expected to pay off by improving the quality of lives in objective ways (obtaining a high-status job) and subjective ways (enhancing life satisfaction). In this study, a college education clearly

does pay off occupationally for the legally blind respondents. The positive impact of education on income and life satisfaction, however, is less for the legally blind respondents than for the sighted peers.

For legally blind respondents and sighted peers alike, a college education is a vehicle for upward mobility. In both subgroups, holding a professional, managerial, or technical occupation is roughly three times more prevalent among those who graduated from college than among those who did not (81% compared to 29%, 75% compared to 24%, Table 13).

Table 13. Education Payoff: Occupation and Life Satisfaction Measures by Vision Status and Education*

Education payoff	Vision status: Legally blind (%)	Vision status: Sighted peers (%)
Percent respondents employed in professional, managerial, or technical categories		
Not college graduate	29	24
College graduate	81	75
Percent respondents "very satisfied" with ...		
Work		
Not college graduate	53	50
College graduate	44	59
Family life		
Not college graduate	67	70
College graduate	68	80
Social life		
Not college graduate	56	57
College graduate	48	56

*For the various subgroup analyses, the smallest base N was 63; maximum N of missing cases = 41, blind and sighted groups combined.

A college education, and the high occupational status that usually accompanies it, does not necessarily translate into high levels of life satisfaction for legally blind people. Among sighted peers, slightly more college graduates than nongraduates reported being "very satisfied" with work (59% vs. 50%); legally blind respondents' reports of being "very satisfied" with work decline with education (53% of nongraduates vs. 44% of college graduates). Similarly, reports of being "very satisfied" with family life increase with educational level among sighted peers (70% vs. 80%), while education level makes virtually no difference among legally blind respondents (67% vs. 68%). Education had no impact on sighted peers' satisfaction with their social lives (57% vs. 56%), but legally blind respondents' satisfaction declines slightly with education (56% vs. 48%).

Looking at the same data another way shows that a college education actually widens the gap in satisfaction between sighted peers and legally blind respondents. This pattern is especially characteristic of satisfaction with work. Among respondents who did not

graduate from college, there is little difference between sighted peers and legally blind respondents (50% vs. 53%). Among college graduates, however, sighted peers are more likely than legally blind respondents to report being very satisfied with work (59% vs. 44%).

Superficially, the impact of education on legally blind respondents' economic situation seems much more positive than its impact on life satisfaction. For legally blind and sighted respondents alike, the average monthly household income is substantially higher for college graduates than for nongraduates. This fact, however, conceals important gender differences. It is primarily for men, both legally blind and sighted, and for sighted women that a college education has a favorable economic impact. For these subgroups the difference in household
income between graduates and nongraduates ranges from $631 for sighted women to $823 for sighted men; for legally blind men, the difference of $778 is nearly as great as for sighted men (Table 14). Among legally blind women, in contrast, the difference between graduates and nongraduates is only $276.

The economic disadvantage that legally blind women experience relative to other subgroups actually increases with education level. Among nongraduates, the monthly household income of legally blind women is $253 to $491 less than the monthly household incomes of the other three subgroups. Among college graduates, the income disparity between legally blind women and the other three subgroups is much larger, $608 to $1,038 (not shown).

Even a graduate degree does not eliminate the economic disadvantage faced by legally blind women. Among respondents who hold graduate degrees, the average monthly household income of legally blind women is $2,111 as compared to $2,411 for sighted women and $2,811 for legally blind men (not shown). For legally blind women the income of graduate degree holders is 37% higher than the income of those with a high school education or less. In contrast, a graduate degree increases the average household income of sighted women and legally blind men by 46% and 58%. For sighted men a graduate degree increases monthly household income by 158%.

The Impact of Gender[3]

The unfavorable economic situation of the legally blind women, relative to other gender/visual status subgroups, underlines the importance of considering their dual minority group status, as people with a disability and as women. This section considers some of the factors that might contribute to the relative economic disadvantages that legally blind women face.

Table 14. Average (Mean) Monthly Household Income by Vision Status, Gender, and Education (N = 310)

Respondents	Mean monthly household income	(Base N)	Dollar difference between graduates and nongraduates
Sighted men	2523		
Not college graduates	2001	(24)	823
College graduates	2824	(34)	
Sighted women	2011		
Not college graduates	1763	(43)	631
College graduates	2394	(28)	
Legally blind men	2299		
Not college graduates	1932	(50)	778
College graduates	2710	(38)	
Legally blind women	1632		
Not college graduates	1510	(56)	276
College graduates	1786	(44)	

*Missing cases = 69.

The previous analysis has already documented the limited payoff of a college education for legally blind women. But there are two other respects in which legally blind women are less well off educationally than are legally blind men or sighted respondents of either sex. First, the education of legally blind women tends to end at an earlier stage. More than one-third (36%) of the legally blind women reported having a high school education or less (Table 15). In contrast, education ended this early for only about one-fourth of legally blind men (28%) and sighted women (25%) and for a mere 13% of the sighted men. Second, legally blind women are the least likely of all respondents to have pursued a college major in one of the prestigious stereotypically male disciplines (physical sciences, business, law, and mathematics). Only 16% of the legally blind women studied one of these disciplines, compared to 27% of the sighted women and more than half of the legally blind men (51%) and sighted men (61%).

Even if more legally blind women had pursued nontraditional majors, this would not necessarily have prevented their concentration in typically low-prestige, low-paying jobs. In fact, the great majority of legally blind women who pursued a male or gender-neutral college major (70%) are employed in a stereotypically female occupation (not shown).

Regardless of the education background, the dominant occupational characteristic of the legally blind women is their concentration in clerical jobs. Forty percent of the sample of legally blind women have clerical jobs, compared to 25% of the sample of sighted women. Clerical occupations are rare both among legally blind men (12%) and sighted men (5%).

Just as the legally blind women enjoy fewer educational and occupational advantages than other respondents, they are less likely to be married than sighted women (48% vs. 61%), legally blind men (61%), or sighted men (87%). They also are more likely to live alone (35%) as compared to the other groups (27%, 21%, and 5%, respectively). In addition, legally blind women are the least likely to live in a household with two or more people (27% vs. 38%, 42%, 44%, respectively).

Table 15. Selected Background Differences Between Legally Blind Women and Other Gender/Vision Status Groups

	Vision status and gender			
Respondents	Legally blind women (%)	Legally blind men (%)	Sighted women (%)	Sighted men (%)
(Base N)	(116)	(99)	(81)	(64)
Education				
High school graduation or less	36	28	25	13
Stereotypically male college major (college attendees only)	16	51	27	61
Occupation				
Clerical job	40	12	25	5
Currently married	48	61	61	87
Living arrangements				
Lives alone	35	21	27	5
Lives with 2 or more	27	42	38	44

Table 15. Selected Background Differences Between Legally Blind Women and Other Gender/Vision Status Groups

Respondents	Vision status and gender: Legally blind women (%)	Legally blind men (%)	Sighted women (%)	Sighted men (%)
Monthly household income in dollars (mean)	1,657	2,262	2,011	2,483
Married	1,934	2,599	2,373	2,594
Single	1,357	1,690	1,436	1,679

*Because of the demographic variables have some missing cases, the actual percentage bases vary slightly from the N's shown under each gender/visual status group. The largest number of missing cases is for household income (24). Missing cases for the other variables range between 4 (education) and 16 (occupation).

The fact that the legally blind women are more likely than other respondents to be single and to live alone, however, does not fully explain their unfavorable economic circumstances. The average monthly household income of single legally blind women ($1,357) is $79 lower than the average income of single sighted women ($1,436) and $333 less than that of single legally blind men ($1,690). Even among married respondents, legally blind women are substantially less well off ($1,934) than sighted women ($2,373) and legally blind men ($2,599). Among married respondents, in fact, the income disparities between legally blind women and the other gender/visual status groups are even greater than they are among single people (differences of $439 to $665 for married respondents, compared to $79 to $333 for single respondents).

Considering the problems they face, relative to the other subgroups, legally blind women might be expected to report the highest levels of dissatisfaction with their lives. This expectation holds primarily in regard to dissatisfaction with family life. Seventeen percent of legally blind women are dissatisfied with their family lives, compared to between five and nine percent of respondents in the other gender/visual status subgroups (not shown). Even this difference of between eight to twelve percent is modest. The only other difference, dissatisfaction with work, is very small. Legally blind women are only slightly more likely to be dissatisfied with their work lives than other respondents (22% vs. 13% to 16%).

There is no clearcut explanation for the paradox of similar levels of satisfaction and widely varying educational, economic, and social circumstances. Perhaps legally blind women's social and economic expectations are unusually low or they are unaware of their deprivations relative to other subgroups. Or perhaps given that this sample represents women with employment
experiences, they tend to compare themselves to unemployed legally blind women, whose social and economic circumstances are almost certainly worse than their own.

Especially considering the use of sampling procedures that maximized similarity among the gender/visual status subgroups, the unfavorable social and economic circumstances of the legally blind women are striking. These findings attest to the importance of taking sex differences into account in studies pertaining to disability. Even if and when full employment for people with disabilities does arrive, it is likely to look very different from the perspective of women than of men.

Thus far, the report has reviewed the social background characteristics of the legally blind and sighted samples in some depth, identified the types of solutions to the challenges of reading and mobility/ transportation, and highlighted the issues concerning the differential impact of education for legally blind and sighted people and the relatively disadvantaged status of legally blind women. The stage is set to describe the lifestyles of each vision status group as revealed in their patterns of money expenditures and in their patterns of activities as measured by time use.

Expenditures

At the outset of this study, it seemed reasonable to assume that legally blind respondents would have higher expenditures than sighted peers, despite the sample matching strategy. The researchers assumed that the interaction of limited sight and environmental barriers would constrain cost-saving purchasing choices for legally blind people. Vision loss, for instance, can limit the ability to comparison shop; therefore, legally blind people might have to pay for assistance in purchasing items such as clothing and food. For these reasons and others, the researchers expected to find that legally blind respondents have higher routine household expenditures than sighted peers, as well as special costs associated with adaptive strategies and devices (e.g., readers, computers, and other adaptive technology).

This section explores these expectations by (a) comparing the routine household expenditures of legally blind and sighted people and (b) reviewing the special costs associated with legal blindness. The data partially confirm the assumption that it costs more to be legally blind, expecially for respondents who are totally blind. Nevertheless, there are many similarities between legally blind respondents and sighted peers. In some categories, expenditures actually are lower for legally blind respondents, perhaps because some of their purchasing options are more limited. As expected, the legally blind respondents do incur special costs, but these are neither as high nor as universal as one might have thought.

Routine Household Expenditures

The data on expenditures, like the income data, are rough approximations. They come from questions about the typical weekly or monthly amounts spent by households in broad categories common to legally blind and sighted people.

The expenditures of legally blind respondents and signted peers are very much alike in certain respects. The greatest similarity is in the percentage of respondents reporting any outlay in each category. For example, nearly all respondents, legally blind and sighted alike, report outlays for housing, food, utilities, transportation, dry cleaning or laundry, and entertainment (ranging from 94% to 99%, respectively, not shown). Slightly smaller percentages report costs for medical care, life insurance, and housekeeping or cleaning (81%

to 88%). The category least often reported (though not the smallest dollar amount) is health insurance (74% to 79%).

As Table 16 shows, the rank order of the average (mean) expenditures in each category is also very close. In all subgroups, the largest outlays, by far, are for housing and food. The few rank order reversals (e.g., between transportation and utilities) will be clarified in the discussion that follows.

As Table 16 also shows, legally blind respondents' households spend less in virtually all categories than sighted peers' households. However, many expenditures (notably housing and food costs) can be closely linked to the number of people in the household. Because legally blind respondents typically live in smaller households than sighted peers, simple comparisons of amounts spent can distort the true picture. The next section, therefore, considers expenditures in relation to household size.

Household expenditures in relation to household size. A comparison of expenditures for food illustrates the distortions that can result from failing to consider costs in relation to household size. In actal dollars, totally blind respondents, in particular, seem to spend substantially less for food than sighted peers ($294 compared to $347, as shown in Table 16); that is, their average food expenditures are only 84% as great as those of sighted peers. This difference in food costs, however, closely corresponds to the difference in household size: The average household of totally blind respondents is only 76% as large as that of sighted peers. In proportion to household size, therefore, the food expenditures of totally blind respondents and sighted peers are almost identical.

In assessing differences in expenditures, one must compare two percentages, not two dollar amounts. Specifically, one must compare (a) legally blind respondents' expenditures as a percent of sighted peers' expenditures (i.e., *expenditure ratio*) with (b) legally blind respondents' average household size as a percent of sighted peers' household size (i.e., *household size ratio*). Using this procedure, Table 17 identifies the categories in which these ratios diverge by at least 10%. That is, for the categories and subgroups shown, differences in expenditures are real; household size cannot explain them away.

The original expectation that legally blind people (totally blind and visually impaired alike) have higher expenditures applies only to housekeeping or cleaning. For the legally blind group as a whole, however, the *expenditure ratio* is higher than the *household size ratio* by a margin of only 13%. This modest difference might reflect the cost of supplies or of paid assistance, possibly including assistance with grocery shopping.

Table 16. Aspects of Household Expenditures

	Vision status						
	Totally blind		Visually impaired		Legally blind		Sighted
Common expense categories[a]	Mean[b] amount per month	% of sighted	Mean[b] amount per month	% of sighted	Mean[b] amount per month	% of sighted	Mean[b] amount per month
Housing	344	73	371	78	363	77	473
Food[c]	294	84	331	95	320	92	347
Transportation	115	60	115	60	115	60	192
Utilities	118	89	123	93	121	92	132
Entertainment[c]	76	100	57	75	62	82	76
Health insurance	44	87	34	68	37	74	50
Housekeeping/ cleaning[c]	41	86	51	107	48	101	48
Life insurance	24	66	30	84	28	78	35
Dry cleaning/ laundry[c]	28	93	27	91	27	91	30
Medical care	18	64	28	103	25	91	28
Median household size	1.35	76	1.68	94	1.56	88	1.78

[a]Categories are listed in declining rank order among the sighted respondents, which corresponds closely to the rank order in the other groups.
[b]Amounts are rounded to the dollar. Cents were retained for calculating percentage of the sighted group's amounts; thus percentages reported differ slightly from apparent figures.
[c]Items were asked for weekly expenses. Responses were multiplied by 4.3 to estimate monthly amounts.

In several other categories, only the expenditures of the totally blind respondents are higher than those of sighted peers. Their higher expenditures for entertainment and dry cleaning or laundry are the most noteworthy. In these two categories, the *expenditure ratios* are higher than the *household size ratios* by margins of 24% and 17%, respectively. Totally blind respondents also spend more than sighted peers for utilities and health insurance, but the differences between the *expenditure* and *household size ratios* are small (13% and 11%, respectively).

At the risk of overinterpreting small differences, there are several possible explanations for the higher costs that totally blind people incur. Some discussants in focus groups conduted prior to the data collection said that they pay more for clothing maintenance because they cannot visually judge when cleaning is needed. They overclean as a preventive measure. In addition, totally blind respondents who were unemployed at the time of the data collection might have had to pay for health insurance out-of-pocket. Moreover, entertainment costs tend to be highest in urban centers, where many of the totally blind respondents live. If totally blind respondents eat in restaurants more often than sighted peers, they might have reported these expenditures as entertainment costs. Finally, totally blind people are likely to rely heavily on electricity-consuming adaptive devices, thus increasing their utility bills.

Whatever the explanations, one should not overstate the importance of legally blind respondents' higher expenditures. As noted above, most of these differences are modest and most apply only to respondents who are totally blind. More importantly, there are many similarities in the expenditures of legally blind and sighted respondents. There are no differences in food costs, for example, as illustrated above. Beyond that, some of the expenditures of the legally blind respondents are actually lower than the expenditures of sighted peers, even when household size is taken into account. Lower expenses are expecially (but not exclusively) characteristic of the visually impaired respondents. For example, unlike totally blind respondents, who report comparatively high expenditures for entertainment and health insurance (as noted above), visually impaired respondents report lower expenditures in these categories than sighted peers. Visually impaired (but not totally blind) respondents also report lower housing costs.

Both totally blind and visually impaired respondents spend slightly less than sighted peers for life insurance. Because they are less likely to be married and to live with children, legally blind respondents might need less extensive coverage. They might also be less able to obtain insurance that is affordable. These considerations might also explain why totally blind respondents spend less than sighted peers for medical care. Because the totally blind subgroup includes SSDI and SSI recipients, some medical costs might be paid for by Medicare or Medicaid.

More striking, however, is legally blind respondents' considerable lower expenditures for transportation. This finding applies both to totally blind and visually impaired subgroups. For the legally blind group as a whole, the *expenditure ratio* is less than the *household size ratio* by a margin of 28%. Other data, on the respondents' (not the households') typical transportation costs confirm legally blind respondents' lower expenditures in this category. Even on an individual basis, these costs are lower for legally blind respondents than for sighted peers.

Table 17.
Categories with a Notable Difference in Amount of Household Expenditure Between Legally Blind Subgroups and Sighted Respondents, Controlling for Household Size*

	Vision status					
	Totally blind		Visually impaired		Legally blind	
Criterion	Median household size as a percentage of sighted respondents' households					
	76		94		88	
Expenditure category	Expenditure ratio (%)	% Difference	Expenditure ratio (%)	% Difference	Expenditure ratio (%)	% Difference
Housing	--	--	78	-16	77	-11
Food	--	--	--	--	--	--
Transportation	60	-16	60	-34	60	-28
Utilities	89	+13	--	--	--	--
Entertainment	100	+24	75	-19	--	--
Health insurance	87	+11	68	-26	74	-14
Housekeeping or cleaning	86	+10	107	+13	101	+13
Life insurance	66	-10	84	-10	78	-10
Dry cleaning or Laundry	93	+17	--	--	--	--
Medical care	64	-13	--	--	--	--

*The first row shows the *household size ratio* for each subgroup, that is, median household size of each legally blind subgroup as a percentage of sighted peers. Subsequent rows show for each subgroup (a) the *expenditure ratio,* i.e., expenditures as a percentage of sighted peers and (b) the percentage difference, i.e., the difference between the *expenditure* and *household size ratio*. Figures are shown only for those categories where the *expenditure ratio* differs by 10% or more (higher or lower) from the *household size ratio* (shown as % difference in table).

Household composition (as distinct from household size) probably helps to explain why transportation costs are lower for legally blind respondents than for sighted peers. Fewer legally blind respondents have children who might need to be driven to school or social events. And because legally blind respondents do not drive, their households are less likely to have two cars to maintain. Beyond that, some legally blind respondents use subsidized transportation (51% use a disability discount) and more use inexpensive public transportation. Few use taxis which, in many parts of the country, are expensive. Several findings from the time diary data are
consistent with these interpretations. For example, legally blind respondents depend more on transportation from others outside the household (i.e., they spend more time "waiting for transportation"). In addition, they devote less time than sighted peers to social activities that take place outside the home.

Special Expenditures Associated with Legal Blindness

Data on routine expenditures provide only a partial picture of the financial outlays of legally blind people, who may incur costs in three categories that reflect special needs associated with blindness: readers, adaptive devices (other than mobility), and mobility aids. The findings regarding costs for those items are presented next.

Readers. Four-fifths (82%) of legally blind respondents report that they use readers (see Table 9). Not surprisingly, nearly all totally blind respondents (97%) use readers, while fewer (75%) visually impaired respondents do.

Most reading is done on an unpaid basis, by family, friends, and/or agency-provided volunteers. Queried whether any of their readers are paid, only 22% of the legally blind respondents said "yes" (30% of totally blind sample, 18% of visually impaired sample) (see Table 10). However, this seems an underestimate, since 51% of the legally blind group mentioned co-workers as readers. Presumably, co-workers do incidental reading while on the job and were not considered to be paid readers. In
addition, employers do pay for some reader services.

Among the minority of the legally blind sample who use paid readers, nearly half (48%) pay some or all of the cost themselves (60% of totally blind sample; 38% of visually impaired sample) (Table 18). Overall, only 11% of the legally blind sample report paying readers (22% multiplied by 48% = 11%), slightly higher for the totally blind subgroup, and lower for the visually impaired respondents. Reported on a weekly basis, their costs range from $1 to $70 with a median just under $10 and a mean of $17. Annualized, the median is about $520 and the mean $884. Because of the small number of respondents reporting any costs associated with readers, totally blind and visually impaired subgroups will not be reported.

Use of readers may entail other costs besides direct payments. Readers may be used indirectly, that is, by recording onto cassettes. Over half of those who use readers report that some of that usage is via cassettes or records. Almost thirty percent of the legally blind sample report some cost for tapes related to reading, although the average is quite low, a mean of $57 per year among those with such costs (not shown).

Rarely there are also recruitment costs. It is quite common that the legally blind group must recruit new readers (54% have done so; see Table 10), but only 15% of those reported spending money on recruiting the last time they did it (mean of $50, median of $15) (not turnover rate of readers recruited by legally blind users.

Adaptive devices. Asking about cost of adaptive devices is cumbersome because of the large number and variety of devices in use. After pretesting a more detailed approach, a simplified but still lengthy procedure was used to identify the types of devices used, whether they were used at home or work, and who paid for the devices. Respondents were then asked to estimate the overall cost of devices used at work and at home. For each setting, they were asked separately the amounts paid by themselves or their families. Cost estimates were obtained using a range of dollar amounts; therefore, midpoints were used to estimate means.

This sample of legally blind persons almost universally uses adaptive devices at home (99%) and at work (95%). Almost all of them could estimate costs, although the percentage saying "don't know" was slightly higher for home use than work use devices (5% vs. 3%) (not shown). That might seem surprising, because people were more likely to have paid for home use devices. However, work use devices were more often "big ticket" items and respondents may have been involved in their selection. The calculations that follow omit the few who did not report device use or who could not estimate their cost.

For both settings (work and home), a small percentage of people reported that all the devices they used entailed no cost to anyone. Totally no-cost adaptations were slightly more common at work than at home (12% vs. 4%), but as already noted, work also involved somewhat larger percentages of people with rather costly totals (43% of legally blind people use devices in the work setting that cost more than $2,000 vs. 30% in the home setting).

Average costs were considerably higher for devices used in the work setting than at home (means of $2,315 vs. $1,705; medians of $2,628 vs. $490). However, respondents were much more likely to have paid for devices they used at home. Only 4$ of visually impaired respondents paid nothing for cost bearing devices used at work. These figures exclude people who paid noting because the items cost nothing. The mean expenditures by respondents for work based devices were much lower than for home based ones: $469 vs. $1,285; the respective medians were $22 and $371.

Table 18. Special Expenditures Associated with Legal Blindness

Special expenditures	Vision status: Totally blind (%)	Vision status: Visually impaired (%)	Legally blind (%)
Pays for readers			
Self	30	23	26
Someone else	40	62	52
Self and someone else	30	15	22
Total	100	100	100
(Base N)	(20)	(26)	(46)
Total cost of devices used at work			
$0	5	15	12
$1 - $100	12	21	18
$101 - $250	11	3	5
$251 - $500	12	9	10
$501 - $1000	9	3	5
$1001 - $2000	5	7	6
$2001 - $5000	19	25	23
More than $5000	26	18	20
Total	100	100	100
(Base N)	(57)	(130)	(187)
Total cost of devices used at home			
$0	2	6	4
$1 - $100	11	23	19
$101 - $250	14	8	10
$251 - $500	22	15	17
$501 - $1000	13	8	9
$1001 - $2000	14	8	10
$2001 - $5000	9	24	19
More than $5000	16	9	11
Total	100	100	100
(Base N)	(64)	(127)	(191)

Table 18. Special Expenditures Associated with Legal Blindness (continued)

Special expenditures	Vision status: Totally blind (%)	Visually impaired (%)	Legally blind (%)
Amount of money paid by Respondents for devices used to work			
$0	37	49	45
$1 - $100	19	24	23
$101 - $250	12	5	7
$251 - $500	14	10	11
$501 – 1000	4	3	3
$1001 - $2000	4	3	3
$2001 - $5000	4	5	5
More than $5000	7	1	3
Total	100	100	100
(Base N)	(57)	(135)	(192)
Amount of money paid by respondents for devices used at home			
$0	2	11	8
$1 - $100	20	26	24
$101 - $250	22	6	11
$251 - $500	14	13	13
$501 – 1000	9	12	11
$1001 - $2000	14	9	11
$2001 - $5000	8	19	15
More than $5000	11	5	7
Total	100	100	100
(Base N)	(64)	(130)	(194)

Table 19. Computer Usage

Computer usage	Vision status: Totally blind (%)	Visually impaired (%)	Legally blind (%)	Sighted (%)
Use computers	44	42	42	49
(Base N)	(66)	(147)	(213)	(144)
If use computers,				
Use at work	90	84	86	90
(Base N)	(29)	(61)	(90)	(70)
Use at home	66	57	60	37
(Base N)	(29)	(61)	(90)	(70)
Source of payment				
Self	52	56	47	31
Family	3	3	3	6
Employer	45	44	44	80
Vocational rehabilitation	17	15	16	--
Other	14	13	13	4
(Base N)	(29)	(61)	(90)	(70)

The totally blind and visually impaired subgroups hardly differed in the average cost of adaptive devices they used at home or in the high percentage of that cost which they themselves paid. In work settings, by contrast, the mean cost of adaptive devices was somewhat higher for the totally blind group. That group paid for a somewhat higher percentage of the cost. Consequently, the estimated out-of-pocket expenditure by totally blind respondents for work based devices was about double that of visually impaired respondents (mean of $742 vs. $354).

The reported expenditure levels are cumulative (i.e., amounts ever spent for devices used currently) rather than annual. They do not reveal what portion of the cost

might recur annually. It is fair to speculate that if this same sample were followed over time, the ratio of work based to home based expenditures would rise. That is because about half of the sample report that some major equipment was purchased for them by vocational rehabilitation agencies; such purchases are approved to help clients obtain a job but will not be purchased for job advancement. (Vocational rehabilitation assistance for equipment for employed persons is possible under the strict condition that the job would be lost otherwise.)

Computers. Among adaptive devices, computers are of particular interest because they offer expanded employment options for legally blind people, but they may be costly.

The study obtained some comparative data regarding computers for sighted peers, although their computers did not require special adaptations.

Nearly equal and large (though minority) portions of the legally blind and sighted groups reported that they use computers (42% and 49%, respectively) (Table 19). Of those who do, the portions who use computers at work are similarly high: 86% of legally blind respondents and 90% of sighted respondents. There is, however, a striking difference between the vision groups in the portion of computer users who use them at home: 60% of the legally blind users compared to only 37% of sighted users. It is very likely that such home usage is work related, although it may be for other reading.

Reflecting the difference in home usage, legally blind respondents were more likely to have personally paid for the computers, at least in part (47% reported that they paid and 3% reported their families had paid), compared to sighted respondents (31% and 6%, respectively).

But even though legally blind people are as likely to use computers at work as their sighted peers, employers much less often contributed toward the cost of the former group's computers: 44% of legally blind computer users said their employer paid for their computer, compared to 80% of the sighted users. Few legally blind users had other sources of help in paying for computers: 16% reported that the vocational rehabilitation system helped and 13% received assistance from other sources. Four percent of sighted users also reported other sources of payment.

Mobility aids. Most legally blind people incur some costs for mobility aids (e.g., long or white cane, guide dog, or electronic travel aids such as a laser cane). In this study, 79% of the legally blind sample (99% of totally blind, 70% of visually impaired respondents) reported using one or more such aids (not shown). Related expenditures consist of replacement canes; new cane tips; and maintenance of guide dogs, including veterinarian fees and dog food.

When asked to estimate their annual expenditure for mobility aids, quite a few (11% of users, N = 19) did not know. For the following calculations of mean costs, costs were imputed for those 19 respondents by assigning them the mean of those who reported some cost. In the percentage distribution, the 19 were distributed to cost categories in proportion to those who reported some cost. Using this statistical adjustment, 18% of mobility aid users had no annual costs for those aids. At the other extreme, 18% reported annual costs of over $250 (five people reported $1,000 or more). Among users, the mean annual cost was $150.

Discussion of Special Costs

This review of cost categories that apply only to legally blind people (readers, adaptive devices, and mobility aids) leads to some broad observations. First is the fact that each category is used almost universally by totally blind persons and to a substantial extent by visually impaired persons. Indeed, one could say that for legally blind persons who aspire to employment, access to such resources is essential.

A notable minority of users have no out-of-pocket costs for those resources. They either rely on volunteers (readers), qualify for assistance as rehabilitation clients, or benefit from the good will of charitable agencies. The difficulty with such contributions is that the beneficiary role restricts users' discretion in when, what, and how they access and use needed resources.

On the other hand, notable minorities have substantial costs in each of these categories of both an ongoing and sporadic nature. Reader costs, for the minority who pay, are ongoing; they must be factored into weekly budgets. For guide dog users, the same applies to their mobility aid costs. However, cane users' ongoing costs are relatively minor. Adaptive devices require sporadic outlays, sometimes very large. While their acquisition is optional, if certain of the continuously improving technologies are not acquired due to cost, the legally blind worker's efficiency and career enhancement may be restricted. The evidence shows that employers have thus far provided only limited assistance in paying for work based devices.

Time Use

When considering legally blind persons' quality of life, economic factors come readily to mind. The study of time allocation is one strategy for providing a more multidimensional view of the quality of life. When applied to the vanguard of legally blind people who are employed, time-use data can be a window through which to glimpse what the future holds for people with disabilities.

This section compares how the samples of legally blind people and sighted peers allocate their time among three very broad, and taken together, all-encompassing arenas of life: employment-related activities, domestic activities, and discretionary activities. These three areas cover ten major groupings of data on 223 specific activities collected using the time diary method. This ten-category grouping was based on Juster and Stafford's general population study of time allocation (1985). As in any classification, the grouping of activities is somewhat arbitrary. Using an established scheme, such as the one developed by Juster and Stafford, promotes consistency across studies and contributes to the accumulation of knowledge over time.

As the following pages will show, there is an essential similarity in the time allocation of the legally blind respondents and the sighted peers that reflects the many ways in which the two groups are demographically alike. Nevertheless, despite sampling procedures that promoted strong demographic similarities, the analysis has revealed demographic differences that could cause the time allocation of legally blind and sighted respondents to diverge.

Most importantly, the legally blind respondents have fewer opportunities to participate in

the labor force and in traditional family roles. By the time of the first interview, more of the legally blind respondents reported being unemployed. Moreover, more legally blind than sighted respondents are single and live alone. When interpreting the time-use data, it is critical to keep these demographic differences in mind.

It is equally important to know that the following analysis uses only the data on primary activities, that is, the first activity respondents mentioned when reporting what they were doing during a given time period. This report on primary activities is the essential first step in analyzing a very large and complex data set, but necessarily presents an incomplete picture of respondents' time allocation. The next analytic step, planned for future reports, is to include the information on secondary and tertiary activities that respondents were doing "at the same time" as the primary activity.

Some Fundamental Similarities in Time Use

Overall, the legally blind and sighted respondents alike participated in a wide range of activities. This study finds little support for the view that legally blind people lead restricted and uneventful lives. All of the activities studied by Juster and Stafford (1985) were reported by at least some respondents, with just a few exceptions. No respondent, for example, reported having argued or fought with anybody or having disciplined children during the period covered by the time diaries. No one applied for or received unemployment benefits, welfare, or food stamps. There were some sports that no one reported, including tennis, racquetball, ice or roller skating, judo, boxing, wrestling, and hunting.

The legally blind and sighted respondents also are essentially alike in their time allocation priorities, as Table 20 shows. Judging from the mean number of hours per week spent in the ten activity areas, both legally blind and sighted people allocate the largest segments of their time to personal needs and care, including (among other things) washing, dressing, meals, and sleep (about 73 and 76 hours, respectively); work and other income producing activities, including time spent at the office, travel to and from work, and meals while at work (34 hours and 36 hours); and passive leisure, which includes such quiet activities as watching television, reading, telephone conversations, and relaxing (26 hours and 20 hours). (See Appendix E for complete list of activities.)

Passive leisure, a potentially controversial term, was coined by Juster and Stafford (1985). *Passive*, as used in this study, does not imply lethargy or other negative personal qualities. Rather, it refers to leisure pursuits that typically involve either primarily mental activity (e.g., reading, listening to music, and phone conversations) and/or minimal physical exertion (e.g., relaxing, smoking, and drinking). The *passive leisure* category serves as a contrast to *active leisure* pursuits that are physically strenuous (e.g., sports) or that involve manipulating physical objects (e.g., playing cards, knitting, and collecting stamps). In general, passive leisure lends itself better than active leisure to solitary activity that takes place in one's own home.

People in both groups allocate only limited segments of their time (no more than 12 hours) to the other activity areas, including domestic and household activities (e.g., meal preparation, housework, gardening, and other outdoor chores), entertainment and social activities (e.g., attending spectacles and events like sports competitions and movies, socializing at parties, and dancing), organizational activities ranging from religious practice to participation in political parties and civic organizations, sports and active leisure (e.g., participation in sports like golf and swimming, music or singing lessons, and out-of-doors activities including camping and fishing), and obtaining goods and services (e.g., shopping

for groceries and durable goods and acquiring or arranging for services such as medical care, appointments with hairdressers, and clothing repair).

Finally, legally blind and sighted respondents are alike in devoting, on the average, only very small segments of time (under 3 hours per week) to education and professional training and to child care. The very limited amount of time devoted to child care almost certainly reflects the fact that relatively few respondents, whether legally blind or sighted, live with children.

Key Differences in Time Allocation

As noted earlier, the coding scheme used to classify time use covers more than two hundred specific activities and ten broader activity areas. When discussing key differences between legally blind and sighted respondents, it is useful to think in terms of three even broader categories that capture the major arenas of daily life. The first is employment-related activities. Given the strong connection between educational attainment and employment, educational activities are included here. The second domestic category covers the activities associated with the personal care of the individual family members, sleep, and the care of one's home. Discretionary activities include participation in organizations (e.g., PTA, civic associations, professional associations, and so forth) as well as various leisure time pursuits.

As Table 20 shows, there are important differences in the way legally blind people and sighted people allocate their time. Briefly, sighted people, on the average, spend more hours per week than blind people do on most of the routine activities that make up the core of most people's lives, employment and domestic activities. In contrast, legally blind people spend more time pursuing passive leisure, a discretionary activity area.

These results indicate that the lives of sighted people revolve more around work and home which are the centers of traditional adult roles. This finding reflects the fact that sighted people have more clearly defined role obligations. As noted above, more sighted people were still employed at the time of the first interview and they are much more likely to be married and to live with children. The sighted peers, for example, devote more time than legally blind respondents do to work and other income producing activities (36 hours compared to 34 hours). When one factors out peripheral activities such as travel to and from the job and preparing for work, however, a stronger relationship emerges. Sighted people spend significantly more time on *normal work*, that is, activities that are part of the main job itself (29 hours compared to 22 hours for totally blind respondents and 25 hours for those who are visually impaired) (Table 21).

Table 20. Mean Number of Hours per Week Spent on Employment-Related Activities, Domestic Activities, and Discretionary Activities by Vision Status

Activities	Legally blind mean (sd) (N = 213)	Sighted mean (sd) (N = 145)
Employment-related activities		
Work and other income producing activities	34.33 (18.94)	36.17 (17.56)
Education and professional training	2.28 (6.81)	.96 (3.94)
Domestic activities		
Domestic and household	10.91 (8.56)	12.13 (8.82)
Child care	1.30 (3.99)	2.57 (5.11)
Obtaining goods and services	4.69 (8.16)	6.61 (6.42)
Personal needs and care	73.30 (11.09)	75.64 (11.50)
Discretionary activities		
Organization	4.73 (7.66)	4.39 (7.63)
Entertainment and social	5.33 (5.73)	7.27 (7.32)
Sports and active leisure	4.72 (7.68)	4.62 (7.44)
Passive leisure	26.00 (13.61)	19.64 (10.45)

For their part, legally blind respondents devote more of their time to educational activities than sighted people do (2 hours vs. 1 hour) (Table 20). This pattern might reflect the higher levels of unemployment and job dissatisfaction among the legally blind respondents. In more aggressively pursuing adult education, some respondents might be trying to improve their employment prospects.

Sighted people spend more time in all domestic activity areas than legally blind people do. For instance, sighted people allocate more hours per week to child care (3 hours vs. 1 hour), obtaining goods and services (7 hours vs. 5 hours), and personal needs and care (76 hours vs. 73 hours). This difference in time devoted to personal needs and care primarily reflects the greater amount of time that sighted people spend sleeping, despite their greater role obligations. On the average, sighted people devote 57 hours per week to their night's sleep (or 8.1 hours per night). Totally blind and visually impaired respondents devote only 52 to 54 hours per week to sleep (or 7.4 to 7.7 hours per night) (Table 21). One possible reason for this difference, discussed in the post analysis focus groups (see Appendix A), is the greater "complications of daily living" that legally blind people face, which reduce the amount of time available for sleep. For example, compared to sighted peers, totally blind and visually impaired respondents spend significantly more time waiting for travel to work (.07 hours vs. .38 to .59 hours per week).

Sighted people also spend more time than legally blind people do in one discretionary area, entertainment and social activities (7 hours vs. 5 hours) (Table 20). One reason might be connected to the greater family obligations of sighted people. Being married, for instance, can increase both social obligations and opportunities for socializing.
Sighted peers' less restricted access to transportation might also be a factor. Most of the activities included in this category take place outside the home.

The single most striking characteristic of legally blind respondents' use of time, however, concerns passive leisure. Considering the socially imposed restrictions that many legally blind people face, for instance, the transportation barriers discussed earlier in this report, it is not surprising that legally blind respondents devote much more time to passive leisure than sighted peers do (26 hours vs. 20 hours). Visually impaired respondents spend nearly as much time on passive leisure as totally blind respondents (26 hours vs. 27 hours). Most notably, as Table 21 shows, compared to sighted peers, the visually impaired and totally blind respondents devote more time to listening to the radio (.27, 1.36, and 4.02 hours, respectively), listening to records and tapes (.28 to .51 and 1.15 hours), telephone conversations (1.11 and 1.95 to 2.58 hours), and relaxing (.61 to .90 and 1.73 hours).

Table 21. Mean Hours per Week by Vision Status for Specific Time Diary Activities Selected as Statistically Significant Difference (p # .05) Between Subgroups

Category	F-Ratio	Vision status* Mean hours per week		
I. Employment-Related Activities				
Work and other income producing activities				
Normal work	5.49	TB	VI	S
		22.25	24.91	29.43
Work at home	5.60	S	VI	TB
		.34	1.27	
3.69				
Travel to and from work with guide dog, cane, etc.	2.94	S	TB	VI
		.00	.30	.33
Arrange for travel to work	7.42	S	VI	TB
		.00	.00	.02
Wait to travel to work	12.20	S	VI	TB
		.07	.38	.59

Table 21. Mean Hours per Week by Vision Status for Specific Time Diary Activities Selected as Statistically Significant Difference (p # .05) Between Subgroups (continued)

Category	F-Ratio	Vision status* Mean hours per week		
Education and professional training				
Travel for education with guide dog, cane, etc.	3.14	VI	S	TB
		.00	.00	.15
II. Domestic Activities				
Domestic and household activities				
Routine outdoor cleaning and chores	5.70	TB	VI	S
		.22	.47	1.11
Car care	6.08	TB	VI	S
		.00	.07	.41
Pet care	2.99	S	VI	TB
		.57	.85	1.24
Wait for household activity other than travel	3.98	S	VI	TB
		.00	.00	.03

Table 21. Mean Hours per Week by Vision Status for Specific Time Diary Activities Selected As Statistically Significant Difference (p <.05) Between Subgroups (continued)

Category	F-Ratio	Vision status* Mean hours per week		
		.23	.40	.96
Other household chores	4.13	VI	S	TB
Child care activities				
Medical care for child	3.03	S	VI	TB
		.00	.01	.08
Other child care	3.25	TB	VI	S
		.00	.00	.02
Travel related to child's social and nonschool instructional activities	4.11	TB	VI	S
		.00	.04	.16
Obtaining goods and services				
Shop for groceries	3.41	TB	VI	S
		.28	.54	.68
Shop for other goods	5.20	TB	VI	S
		.84	1.15	1.97

Table 21. Mean Hours per Week by Vision Status for Specific Time Diary Activities Selected As Statistically Significant Difference (p <.05) Between Subgroups (continued)

Category	F-Ratio	Vision status* Mean hours per week

Shop for financial services	4.09	TB	VI	S
		.08	.13	.33
Shop for appliance repairs	3.44	VI	TB	S
		.10	.02	.07
Shop for take-out food	3.28	TB	VI	S
		.01	.07	.09
Wait to travel for goods and services	8.90	S	TB	VI
		.00	.02	.14
Errands	5.36	TB	VI	S
		.00	.01	.09
Travel for goods and services	9.80	TB	VI	S
		1.18	1.66	2.33
Personal needs and care				
Medical care to adults in household	4.32	VI	S	TB
		.00	.01	.25

Table 21. Mean Hours per Week by Vision Status for Specific Time Diary Activities Selected As Statistically Significant Difference ($p < .05$) Between Subgroups (continued)

Category	F-Ratio	Vision status* Mean hours per week		

Meals eaten at home	4.25	S	TB	VI
		4.22	5.12	5.36
Night sleep	6.54	TB	VI	S
		52.14	53.63	56.75
Travel that is helping with guide dog, cane, etc.	3.43	VI	S	TB
		.00	.00	.01
Personal travel with guide dog, cane, etc.	3.62	S	VI	TB
		.00	.02	.08
Travel for helping activity	3.01	VI	TB	S
		.01	.04	.16
III. Discretionary Activities				
Organizational activities				
Other organizational activities	3.29	S	VI	TB
		.00	.02	.09

Table 21. Mean Hours per Week by Vision Status for Specific Time Diary Activities Selected As Statistically Significant Difference ($p < .05$) Between Subgroups (continued)

Category	F-Ratio	Vision status* Mean hours per week		

Entertainment and social activities				
Visit with others	3.21	VI	TB	S
		2.59	3.53	3.88
Travel for social activities	6.80	TB	VI	S
		.74	.90	1.43
Sports and active leisure				
Play musical instrument	5.75	S	VI	TB
		.08	.25	.87
Passive leisure				
Radio 26.67	S	VI	TB	
		.27	1.36	4.02
TV	8.52	TB	S	VI
		7.40	11.30	13.18
Records and tapes	3.84	S	VI	TB
		.28	.51	1.15

Table 21. Mean Hours per Week by Vision Status for Specific Time Diary Activities Selected as Statistically Significant Difference (p # .05) Between Subgroups (continued)

Category	F-Ratio	Vision status* Mean hours per week		
Magazines	3.86	VI	S	TB
		.24	.25	.92
Talking books	21.33	S	VI	TB
		.00	2.24	2.94
Read newspapers	18.51	TB	VI	S
		.10	.45	1.25
Telephone conversations	4.52	S	VI	TB
		1.11	1.95	2.58
Wait for passive leisure activity	5.16	VI	S	TB
		.00	.00	.04
Relax 7.16	S	VI	TB	
		.61	.90	1.73
Smoking	3.13	S	VI	TB
		.00	.02	.09

*TB = totally blind (n = 66); VI = visually impaired (n = 147); S = sighted (n = 145). Group subsets with a common underline are not significantly different by the least significant differences test at the .05 level.

It is very tempting to speculate that legally blind persons' greater investment of time in passive leisure reflects their less extensive participation in work and family roles. Our preliminary analysis suggests, however, that this is not the principal explanation. Controlling for work related and family related factors, as well as selected other background characteristics, only slightly reduces the relationship between vision status and the amount of time devoted to passive leisure.

Table 22 presents some results from a multiple regression analysis of time spent in passive leisure. The two figures to the right of "Vision status" (third predictor) show the original relationship when the other factors shown are controlled. The second figure is only slightly smaller that the first (-.20 compared to -.26). Marital status is not shown as one of the control factors because it is unrelated to time devoted to passive leisure even at the bivariate level.

Two other factors explain a small portion of the relationship between vision status and passive leisure. One reason that legally blind respondents spend more time in passive leisure is that their incomes are lower. They might be less able than sighted people to afford the more active leisure pursuits or, perhaps, the transportation costs associated with activities outside the home are prohibited. The fact that more legally blind people attended a residential high school also helps to explain, in statistical terms, why legally blind people spend more time in passive leisure. The underlying reasons for this relationship, however, are not clear.

Table 22. Predictors of the Mean Hours per Week Spent in Passive Leisure*

Predictors	Coefficient		Mean hours per week in passive leisure for selected subgroups (Entire sample: 23.43)
	Zero order	Partial	
Mean hours in paid employment	-.37	-.38	Unemployed: 32.39
Sex	.12	.22	Male: 25.14
Vision status	-.26	-.20	Totally blind: 27.78
Monthly household income	-.20	-.15	$500 or less: 38.84
Number of people in household	-.14	-.12	Lives alone: 26.11
High school residential or nonresidential	.16	.08	Residential: 26.20

Adjusted $R^2 = .25$

*This table includes the entire sample (legally blind and sighted peers). Vision is taken into account as a predictor.

Time Use and Gender Issues

As previous sections of this report demonstrated, there are important social differences among legally blind people that shape the experience of visual disability. The time-use data provide further insights about the unique aspects of legally blind women's lives. The time-use data suggest, for instance, that legally blind women's disadvantaged economic status relative to that of sighted women cannot be attributed to the amount of time they devote to their jobs. The following analysis is based on a presentation by Nelson, Kirchner, and McBroom (1991).

Married legally blind women and married sighted women are virtually identical in the amount of time they spend on employment related activities (Table 23). Time devoted to employment does not explain why single legally blind women are economically worse off than single men are. Single legally blind women spend slightly more time per week on employment related activities than single legally blind men do (34.33 hours compared to 33.76 hours).

Single legally blind women, however, are the most active in pursuing their educations. Single legally blind women spend an average of almost three hours (2.88) per week on educational activities, compared to just over one hour among married legally blind women (not shown). This finding is consistent with the fact that single legally blind women are likely to have fewer competing obligations to home and family than married women do, and therefore, have more time available for adult education.

The educational activities of single legally blind women have implications for their economic situation. Their efforts to advance their education might help to explain why they are less economically disadvantaged, relative to legally blind men and sighted women, than married legally blind women are.

Table 23. Mean Hours per Week Spent on Employment-Related Activities by Marital Status, Vision Status, and Gender

	Marital and vision status			
Gender and hours	Married legally blind	Married sighted peers	Single legally blind	Single sighted peers
Women				
Mean hours per week	32.08	32.66	34.33	35.81
Standard deviation	18.60	18.53	16.53	16.05
(Base N)	(53)	(49)	(57)	(31)
Men				
Mean hours per week	39.39	40.42	33.76	31.23
Standard deviation	18.76	15.19	20.60	23.82
(Base N)	(56)	(55)	(34)	(8)

The time-use data on employment have helped to eliminate two interpretations of legally blind women's disadvantaged economic position that they devote less time to work and to furthering their educations than others do. The time-use data, however, can shed light on some other aspects of legally blind women's lives, in the domestic sphere and in discretionary activities. Several domestic activities are of particular interest in being the traditional province of women, especially in their role as wives and mothers. The time-use data on domestic activities can provide some insights about the involvement of legally blind women in what are traditionally feminine roles.

That life maintenance activities are indeed gender related under normal conditions can clearly be seen by comparing the amount of time that sighted women and sighted men devote to household chores, child care, and shopping for goods and services. In all three of these areas, sighted women spend more time (between 1.5 and 4 hours more) than sighted men do (not shown). Among legally blind respondents, however, the gender patterns are much less clearcut.

When it comes to household activities, legally blind women seem as wedded to the traditional female role as sighted women are. Both legally blind women and sighted women spend an average of about 14 hours per week on these activities (13.56 hours per week vs. 13.96 hours per week, not shown). Legally blind men, in contrast, spend less time on household activities than anyone else, including sighted men (an average of 7.81 hours per week, compared to 9.8 hours for sighted men).

When it comes to child care and shopping for goods and services, however, legally blind women participate less than sighted women do. In these respects, the lives of legally blind women are more similar to the lives of men, both legally blind and sighted, than they are to the lives of sighted women. Both legally blind women and legally blind men spend less than half as much time on child care as sighted women do (1.29 hours and 1.32 hours compared to 3.24 hours for sighted women) (not shown). Legally blind women actually devote slightly less of their time to child care than sighted men do (1.29 hours compared to 1.72 hours). The most plausible explanation is that legally blind women are the least likely of all respondents to have children.

In one respect, time devoted to socializing, legally blind men and legally blind women make similar decisions about their use of discretionary time. In two respects, however, legally blind men and legally blind women use their discretionary time differently from each other and differently from sighted people. It is mainly legally blind men who disproportionately spend time on organizational activities and on passive leisure. Legally blind women spend less time on organizational activities than anyone else. Legally blind men, specifically, spend an average of six hours per week pursuing organizational activities. These include volunteer activities, religious practices, and attending the meetings of professional organizations. Sighted men and women, in contrast, spend an average of about four hours per week on organizational activities. Legally blind women typically devote less than four hours every week to organizational activities.

Legally blind women's comparatively low level of organizational participation is emerging as part of a pattern of social isolation. The fact that legally blind women disproportionately are single is a more striking example of this pattern. Even so, legally blind men are not immune from the sometimes isolating effects of vision loss. Vision loss appears to undermine the social activities of legally blind men and legally blind women equally. Legally blind men also appear to spend more of their leisure time in solitary activities than anyone else.

Specifically, of all the gender and vision status subgroups, legally blind men spend, by far, the most time in passive leisure. Some passive leisure, such as talking on the telephone, is social (i.e., nonsolitary). For legally blind people who use readers, for instance, even activities that sighted people tend to do alone can be social. Even so, many other passive activities need not be done alone, but probably often are. Examples include reading, listening to music, and writing letters. Although legally blind people in general spend more time on passive leisure than sighted people do, this pattern is especially true of men who are legally blind. On the average, legally blind men spend almost twenty-eight hours per week on passive leisure, compared to less than twenty-five hours for legally blind women.

Time Use and Life Satisfaction

The time-use patterns of legally blind respondents clearly are different from those of sighted people. But are they somehow "better" or "worse" from the standpoint of quality of life? On certain theoretical grounds, the time-use data suggest that legally blind people have a less desirable quality of life than sighted people do. Legally blind people, for instance, seem less well socially integrated than sighted people and they participate much less in traditional family roles. Legally blind women also have substantially lower incomes.

The data tentatively suggest that legally blind respondents themselves would not subscribe to this negative assessment of their lives. Overall, compared to sighted people, legally blind respondents are only slightly less likely to report being very satisfied with work, family life, and social life. For example, 67% of legally blind people report being very satisfied with their family life compared to 74% of sighted people (not shown). For all intents and purposes, there is no difference between the two groups.

The standards against which legally blind respondents measure the quality of their lives also are different, in some respects, from the standards against which sighted respondents judge the quality of their lives. Time-use patterns have much more of a bearing on the satisfaction of sighted people than on the satisfaction of legally blind respondents. In fact, for legally blind people, time use has nothing to do with satisfaction. The allocation of time appears to have different meaning for legally blind people and for sighted people.

Consider the data shown in Table 24, based on regression analysis. The major area in which time use affects satisfaction for sighted people concerns work. For sighted people, satisfaction is tied to the degree of involvement in the work role. For sighted people, greater amounts of time devoted to employment are related to more satisfaction with work. Participation in organizational activities (which includes participation in professional associations and labor unions) also is conducive to satisfaction with work for sighted people. On the other hand, sighted people who devote the most time to educational activities are the least satisfied with their work lives. Dissatisfaction with work might motivate sighted people to prepare themselves for a different line of work or a promotion in their current field. These same time-use allocations, however, are unrelated to satisfaction with work for legally blind respondents. Not shown is that the differences in the effects of time use also hold when one examines the effects of time use without controlling for background factors.

It is not clear why time use influences the satisfaction of sighted people, but not the satisfaction of people who are legally blind. Certainly, the standards against which legally blind people measure the quality of their lives are not entirely different from the standards that sighted people use.

Table 24. Selected Demographic and Time-Use Predictors of Legally Blind and Sighted Respondents' Satisfaction with Work, Family Life, and Social Life

Predictors	Partial correlation coefficients: Legally blind (N = 206)[a]	Partial correlation coefficients: Sighted (N = 144)[a]
Satisfaction with work		
Race (white = +)	.27	.24
Age	.21	--
Mean hours spent in:		
Employment activities	-.12	.23
Organization activities	-.05	.23
Education activities	-.00	-.16
R^2 (adjusted)	.10	.14
Family life[b]		
Marital status (married = +)	.31	.61
Number of people in household	.21	--
Mean hours spent in:		
Child care	-.01	-.00
Household activities	-.02	.17
R^2 (adjusted)	.16	.37
Social life[c]		
Marital status (married = +)	.21	.25
Race (white = +)	.23	--
Mean hours spent in:		
Organization activities	.03	.23
Social activities	.07	-.11
Active leisure	-.12	.03
Passive leisure	-.01	-.04
R^2 (adjusted)	.08	.12

[a]Missing cases equal 7 legally blind respondents and 1 sighted respondent.
[b]Not shown are the figures for time spent in employment activities, traditionally male household activities, traditionally female household activities, and employment activities, which are unrelated to satisfaction.
[c]Not shown are the figures for occupational status, amount of time spent in employment activities, and sleep, which are unrelated to satisfaction.

As Table 24 shows, for instance, among legally blind and sighted respondents alike, people who are married are more satisfied with their family lives and social lives than single people are.

This analysis has raised more questions than it has answered. Why do legally blind people spend more time on passive leisure? Why do time allocation decisions (in other words, activity patterns) matter less to the life satisfaction of legally blind people? Might even employed legally blind people have lower expectations about the quality of their lives? Whatever the answers to these questions, the analysis attests to the limitations of solely economic criteria for assessing quality of life. If nothing else, it suggests that employment, per se, does not eradicate all objective and subjective differences in the social experience of legal blindness.

Conclusion

This study has provided grounds for optimism about what a full employment future might hold for people who are legally blind. This has *not* turned out to be, as some might have expected, primarily a study of "difference" and "disadvantage." To the contrary, the analysis uncovered many fundamental similarities in the lifestyles of employed legally blind and sighted respondents who are comparable in regard to age, sex, and education. There are some important differences as well. These differences, however, appear to reflect social conditions that are unfavorable to achieving full equality more than the physical limitations of legal blindness, per se.

Based on the very crude available measures, the analysis revealed few economic costs associated with visual impairments when all legally blind respondents are considered together as a group. The legally blind and sighted respondents have similar household incomes and expenditures associated with daily living. As one would expect, legally blind respondents do incur extra costs of adaptive technology for the workplace and home. But the average costs, under $500 and $1,300, respectively, tend to be lower than one might have expected. This fact, in turn, probably reflects the continuing importance of low technology adaptations (including the use of readers, handwriting aids, and adapted clocks and watches) in a supposedly high technology age. While the use of low technology devices for reading and other activities is nearly universal, fewer than half of the legally blind respondents own a computer.

Moreover, the activities of the legally blind and sighted respondents are very similar in important respects. People in both groups participate in a wide range of activities. They have similar priorities in allocating their time among the major life arenas of work, domestic responsibilities, and leisure. These similarities no doubt partly reflect the legally blind respondents' access to, and use of, a multiplicity of methods for adapting to visual impairments. For example, the analysis documented the large variety of print and nonprint methods used for reading, ranging from regular print to the CCTV. The high levels of proficiency in braille almost certainly contributed to the employability of many respondents. Moreover, the great majority of legally blind respondents use at least one mobility device and nearly all recall having received vocational rehabilitation services.

The important similarities notwithstanding, the analysis revealed critical, and sometimes subtle, differences in the lifestyles of legally blind and sighted respondents. These differences manifest themselves both economically and socially.

The economic situation of the legally blind respondents seems more precarious than for sighted peers. The legally blind respondents were more likely to be unemployed at the time

of the first interview and their work histories are spottier. Even in this sample of (mostly) employed people, the legally blind respondents depend more on government benefits. Most striking, however, is the relative economic deprivation of the legally blind women, whose household incomes are substantially lower than for either legally blind men or sighted women. This last finding underlines the dangers of considering legally blind people as a homogeneous mass. One cannot entirely divorce the "costs of blindness" from social conditions, such as gender issues, that can mitigate or accentuate such costs. Nor can one assume that equalizing the educational opportunities of legally blind and sighted people automatically will result in equal levels of satisfaction and opportunities later in life. A college education enhances life satisfaction, especially with work, somewhat less for the legally blind respondents than for the sighted peers. For legally blind women specifically, the economic payoff of a college education (and even of a graduate education) is far less than among the other visual status and gender subgroups.

Differences in the social conditions experienced by the legally blind and sighted respondents probably help to account for some of the major differences in the activities that the two groups engage in. For instance, the legally blind respondents devote less time than sighted peers do to paid employment and domestic activities, which make up the core of traditional adult roles. This latter fact, in turn, almost certainly reflects differences in the domestic arrangements of the two groups and the fact that legally blind women in particular are much less likely to be married than are other respondents. Furthermore, the transportation problems due to vision loss that many legally blind respondents experience (along with their less extensive family obligations) probably help to explain why they devote less time to entertainment and social activities than sighted peers do. The potentially socially isolating effects of the legally blind respondents' somewhat lower incomes (largely among the women) and (for some) their childhood experience in residential schools promote participation in passive leisure activities that might or might not have a social component.

Unarguably, the study of time allocation is a useful device for learning about the lifestyles of legally blind people. This initial report exploited only a small portion of that potential, partly because the analysis included data only on primary activities. Including information on secondary and tertiary activities will provide a more comprehensive picture in future reports on these data. As useful as the time diary method is in conjunction with demographic data, however, it has built-in limitations.

In conjunction with the focus groups that provided supplementary qualitative information, the data merely hint at some of the more subtle barriers that legally blind respondents face in leading their lives. "Waiting" is a noteworthy feature of many legally blind respondents' lives. Even the most comprehensive time allocation study cannot address the possible psychic and social costs of the dependence on others that waiting implies. Readers clearly are central in the lives of most legally blind respondents and yet there is no way to know from the data to what degree legally blind people perceive the management task of recruiting, training, and scheduling readers to be a burden. Nor do the data address the subjective meaning that the legally blind respondents and especially men, attach to their much greater participation in so-called passive leisure. These are among the qualitative issues that would lend more depth to future studies of the lifestyles of legally blind people.

The limitations of this study aside, it has underlined some of the strengths and weaknesses of policies that emphasize employment as a goal of blindness services and formal education as a means to that end. As activists have long claimed and as previous studies have shown, legally blind people clearly can pursue a wide variety of careers and lead lives that are economically and socially very similar to those of the sighted majority. Just as

clearly, promoting education and employment have their limitations as policy goals. The legally blind women in this study are not benefiting from such policies as much as are men. Such policies, in any case, do not address legal blind women's seemingly more limited opportunities for starting families of their own. And, although a college education is clearly an effective vehicle for upward mobility for the legally blind respondents, it does not have quite the economic and subjective payoff for legally blind people that it does for their sighted counterparts. Formal education and employment opportunities, as invaluable as they are, do not guarantee equality for legally blind people in all spheres of life.

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Endnotes

[1]For data on employment among persons with disabilities in general, see pages 46-61 in Louis Harris and Associates (1986). For figures on employment among blind adults, see pages 169-186 in Kirchner (1988).

[2]The following analysis has been adapted from a paper developed for presentation at the annual meeting of the Society for Disability Studies in Washington, DC (Nelson, Kirchner, McBroom, & Graves, 1990).

[3]The following analysis has been adapted from a paper developed for presentation at the American Foundation for the Blind Research/Practice Seminar in Orlando, FL (Nelson, McBroom, Kirchner, & Graves, 1989).

Appendix A
Views on Time Use by Legally Blind Employed People: A Qualitative Study

Views on Time Use by Legally Blind Employed People: A Qualitative Study

Report prepared by: Roni Rosner, RR Research Resources, Consultant

Introduction

The qualitative research reported here is a final step in the data collection process. It is intended to help the analysts gain a more in-depth understanding of the quantitative results and to suggest additional ways in which the existing data could be explored. This report is designed to provide insights into respondent attitudes and needs. Due to limitations in sample size and regional distribution (all participants live in the New York City area), the findings are anecdotal and not projectable results. Nonetheless, they raise significant issues to be pursued and should be viewed as aids in developing hypotheses.

To achieve this objective, two discussion groups of legally blind adults were convened to get participants' reactions to the major findings of the *Time and Money Study*, and to delve into how and why their lives are similar or dissimilar to the "average" person with visual impairments in the study. The study also attempted to ascertain how they are similar or dissimilar to the "average" sighted respondent. The two groups were differentiated on educational qualifications: one was a College-Plus group (those with college and postgraduate degrees), the other a High School-Plus group (high school graduates and people with one or two years of college).

Method

Recruitment

Potential participants were identified from several sources. The primary resource was the CTIB. This list yielded many possibilities for the College-Plus Group. In order to achieve diversity and obtain additional leads for the High School-Plus Group, the aid of other service providers in New York City, such as the Associated Blind, Inc., VISIONS, The Lighthouse, and Job Sight, was enlisted. Finally, the study relied on networking from discussants, friends, acquaintances, and the researchers.

The Groups

The College-Plus group was held at AFB on Monday night, September 23, 1991, from 5:30 p.m. to 8 p.m. The High School-Plus group met on Saturday morning, October 5, 1991, from 9:30 a.m to 12 p.m. Both groups actively participated and held many strong opinions on the

discussion topics; few needed any prompting to contribute.

Sample

The sample specifications were intended to correspond as closely as possible to the larger study of legally blind working people. In order to get a distinct reading on the differences between the two educational groups, the College-Plus group was limited to those with college and postgraduate degrees while the High School-Plus group included high school graduates and people with one or two years of college. Each was to be equally divided between males and females, urban and suburban, with a range of ages and visual disabilities ranging from some useful vision to none.

Due to limited time and resources, it was difficult to fulfill the desired number of members for each group. The groups included fewer men, noncollege educated people, and suburban respondents than had been sought. Help was requested from directors of leading services for visually impaired people, who asked people in the target groups to contact the researchers. Those who called, however, tended to be college educated, female, and urban. Finally, individuals with some college experience were included in what was to have been the high school group. It was also decided not to exclude the few potential participants who had recently lost their jobs; this reality mirrors both the *Time and Money Study* sample and the recessionary economy.

The participants with a lower education level were a challenge on several counts. They were harder to identify, and harder to get to agree to participate. Some who had agreed to participate had difficulties finding their way to AFB and, ultimately, did not participate.

The actual composition of the two groups consists of: (a) seventeen attendees; (b) 10 females, seven males; (c) 14 currently working, three recently lost job; (d) 14 urban, three suburban; (e) two high school, five some high school, five college, five postgraduate; (f) 14 single, three married; (g) 15 with no children, two with grown children; (h) nine with guide dogs, eight without guide dogs. The participants were young and middle-aged adults.

Detailed Findings

Employment Related Activities

Time Spent Working

The preliminary findings of the quantitative data suggest that the visually impaired respondents spend slightly fewer hours on employment-related activities than do sighted peers. Although there is only a small difference in overall primary work activities, the study finds that people with visual impairments spend significantly less time at the office. However, the discussants almost unanimously maintain that this conclusion does not reflect their work experience. They feel that work, whether done in the office or at home, takes up

much more of their day and evening, partly because of obstacles to reading and partly because they are more conscientious than their sighted co-workers.

Quotes Pertaining to Conscientiousness.

"We put in more effort on the job, put in extra effort into the job to be good at it. We put in extra effort to be social at work--to be seen and known. We have to do preparation that sighted people don't have to. We have to prove that they're [employers] getting the best."

"The results trouble me. We put in a little extra. It takes more time and effort for us to get it right, and much more emotional energy. Is the study saying that some blind people are pampered and don't know about the standards the rest of the world operates in? Is it lack of initiative or not knowing what high standards are?"

"I start work before nine, work through lunch, and stay after five. We give a little bit more because of our problem; we compensate."

"We need more preparation for work. I get there earlier, stay later, cover for people. They're always going on breaks. I work through breaks; always come back on time from lunch."

"We devote more time to the job. We come back from lunch on time, we don't talk to friends, we're always at our desks working."

"I got ahead by doing more than anyone else. The sighted people in my department resent it, but they're lazy. I have a work ethic and they don't. People give me assignments because they know it will get done."

Reading

Discussants who do not have the latest technology for translating printed matter convey that they are disadvantaged because they cannot use their office hours as efficiently as others. They cannot pick up something to read when there is free time; usually they have to wait for a reader at a predetermined time. Even those people fortunate enough to have access to an Arkenstone or Optacon say that the machines take much longer than it would take a sighted person to read or scan. There are many more demands on the discussants' time, just to stay on par with their sighted counterparts. Hence, discretionary time is often spent on work-related activities.

Quotes Pertaining to Reading.

"Perhaps the results have something to do with more 'down time' during the work day. I don't have the luxury of picking up reading like other supervisors because they don't provide me with a reader or the right equipment, so I have more idle time at work. Then I have to schedule a reader during my leisure time."

"Everything takes longer. We don't have the luxury of reading things like computer manuals during our commute [to or from work]. We have to put in hours at home with a reader or a scanner."

"I had to use the Lighthouse [for the Blind] every day after work to braille the workbooks of my sighted students because I wanted to follow every word that they were reading. That was like a second job. I spent hours with a readers' service. It leads to physical exhaustion and mental stress because I used up all my free time, with no rest or relaxation. Having to braille work-related reading or even having a reader adds to work-related activities."

"You can spend a lot of time waiting for a reader. Either they're sick or it's snowing or the subways are delayed. Anything can hold them up. You can't start anything else because you have to wait."

"The ratio it takes to use readers or devices is out of proportion to what sighted people need to use. The Optacon ratio is 10 to 1 [in terms of time]."

"I had to pass on a couple of jobs because there weren't enough readers. If you're not going to be able to get all the reading done, it just isn't going to work."

"Sighted [people] can look up what they need to find out in the index. I have to read entire manuals and take notes so I can look it up in Braille. This is still faster than the Optacon because it has to scan whole pages. Or the best you can do is scan the whole thing and put it into word processing, and then search that way. But whenever you use a speech device, it really slows down the computer."

Reanalysis of Time and Money Study Data

The panelists feel that they work harder and longer than sighted people. This led many participants to say that the *Time and Money Study* data should be reanalyzed using only the visually impaired and sighted groups who are employed full-time to determine who works more hours. Further analyses based on education and income could reveal segments so different from each other that it becomes clearly unrealistic to speak of the "average" patterns of the population who are legally blind.

Quotes Pertaining to Reanalysis.

"I don't agree with the finding; blind people work just as long as others. But probably fewer [people who are blind] are working."

"That study must be skewed by the unemployed; you should relook at it by studying just the employed."

"Many could have positions in teaching profession which only requires 6 hours a day at the job site. Can't imagine any other reason

for the finding that blind people work less hours than sighted people."

"There has to be something wrong with those figures. My part-time jobs have been 30 hours. You really should separate out the unemployed."

"Probably fewer [people who are legally blind] are working. Must be due to discrimination against employing blind people."

"I spend nine to twelve hours per day at the office, same as my sighted colleagues; and I take more work home at night than they do."

"All aspects of the job were the same for me as the other itinerant teachers."

"Maybe sighted people spend more time because they get better jobs -- they get middle and upper management positions and we don't. These jobs are more demanding so they spend more hours after five at their desks. We're not given as many opportunities to find those jobs."

Education as a Work-Related Activity

The group members feel that what they consider to be work-related activities may not have been coded that way in the study. During the discussions, they mention numerous work chores which they accomplish in their "free time." Many speak of having readers for work materials, having to braille work materials, having to take computer courses in order to perform their job, and having to take other courses required for applying for a job or getting a job upgrade. They put forth a strong argument for including educational activities under the employment category, because they do not take these courses for fun or to get a better job; they are mandatory, not discretionary. The discussants need certain courses just to stay even with sighted people.

Quotes Pertaining to Education.

"Time spent using readers and going back to school for the job, may not be at the job, but it's job-related. It's not what we want to do, it's what we have to do. It's spending more time on job-related activities than sighted people. Sighted [people] don't have to take all the computer courses that we do; it's not discretionary, it's obligatory."

"Scanners are great, but that means a lot more knowledge. I have to go back to school; we have to know a lot more about computers than the sighted [people]."

There are situations where, before you get a job, you have to take a three month class. If you don't pass the course, you don't get the job."

"When I started a new job, I brailled the entire manual and directory; sighted people don't have to do that extra effort. I had to take a two-week course for the Optacon."

"I took a number of courses to improve my job grade to get more money; that was work-related and took a lot of time."

"Educational activities are job-related. I'm not taking courses in music theory, but computer language."

"In order to assume more responsibility on the job, I have to take more courses. But the sighted don't have to go back to school after work. I do if I want to get ahead."

"You should analyze by newer and older employees to establish the time spent on courses early in career. I put in time gaining skills a number of years ago, so now I have more time for organizational activities."

Women Who are Legally Blind

Another *Time and Money Study* finding is that women who are legally blind devote less time to paid employment than people in other subgroups. Some of our female panelists suggest that is it becoming increasingly difficult to find traditional clerical jobs because the workplace is becoming more visually oriented. Few employers want to dictate reports and correspondence; they are opting for computer software that often has graphic components and cannot be used by a transcription typist who is legally blind. Even some new telephone systems have touch screens, precluding women who are legally blind from receptionist positions. One woman summarized the problem this way:

"But it is getting more difficult to find and keep clerical work; people don't want to dictate. They're using graphics software which our computers can't read. I had to change my job to customer relations. Even the phone systems are becoming visual, with their touch screens."

Discrimination on the Job/Job Discrimination

Although neither unemployment nor discrimination issues were included in the topic guide, many participants spontaneously began to discuss them. One seemed to be a natural component of the other. They asked about the unemployment rate in the study, and were told that it was higher among the respondents who are legally blind. This result was expected by the discussants.

Based on the focus group, it appears that more people in the High School-Plus group are concerned about discrimination in the workplace. They seem to be more insecure about their jobs, perceive that they have fewer options, and often feel invisible because their superiors or co-workers do not acknowledge them. They feel more expendable than the people in the College-Plus group.

Both panels raised the idea that society in general has more anxiety about visual impairments than do those who actually live with the condition. The participants, all of whom have lived with visual impairments since an early onset, appear to be thoroughly acclimated and do not dwell on the hardship of being visually impaired, but more on the physical and social obstacles they encounter in their day-to-day lives. To them, visual impairment, per se, is not as much of a hindrance as is discrimination.

Quotes Pertaining to Discrimination.

"Society thinks that blindness is an insurmountable barrier and they can't focus on the things that make our lives hard. Whereas we accept blindness, but need help with little things that allow us to function normally."

"If you don't make an effort to say hello to people, they won't talk to you because they're afraid of facing the possibility of blindness happening to them, or they don't think we're like them, or don't know what to say, or they're afraid that we will ask them for help and they don't want to be bothered. They see the blind as being needy, and we will leach on to them."

"People don't have a concept of what it is to be blind and they're petrified. When people find out I typed something, they say, 'How can that be? It's perfect.' They're amazed that I can help them."

"People tend to gravitate to 'like' people, and the blind are perceived as different."

"Co-workers and bosses hardly say 'good morning' - they don't want to be bothered with a blind person."

"Despite the ADA and '504' [legislation], employers circumvent the law by dragging their feet when it comes to ordering needed equipment. Therefore, the work the blind [people] can do is limited. This doesn't help them be as productive as possible and could look like they do less work."

"Some employers don't make sure that the blind [people] have enough work to do. They can't figure out what else you can do. You must constantly convince them of what else you can contribute."

"I often win employee awards and others resent it. They thought I won because I was blind, not because I work twice as hard."

"In the Civil Service, the blind [people] have to take tests to go up a level, but the sighted [people] don't, they just get appointed to higher positions."

"Sighted people might acknowledge each other with a non-committal smile or nod. But our mode has to be auditory, and that is a more extreme, more vulnerable level of acknowledgement, and people may not be ready or available or up for speaking - a more

intimate mode of communication."

Technology

Technology is difficult to deal with for people who are legally blind. It can make reading and writing easier and faster, but the front end of the learning curve is long. Respondents feel burdened by having to learn how to use every new piece of equipment that comes along. They don't perceive this to be a problem for the sighted world.

Those who have access, complain about how much time is devoted to courses on using the Arkenstone, Optacon, and Kurzweil. Those who don't have access, complain about being deprived of a machine that could revolutionize their lives.

As the College-Plus group was discussing the latest technology, a "Catch-22" surfaced. Some state agencies for the visually impaired will provide equipment for people who are unemployed or underemployed. For everyone else, if they do not have the money, they cannot buy the equipment and cannot do their job as efficiently. They probably will not get promoted and therefore will not be able to afford the equipment. Thus, based on these findings, it is possible that society has a self-fulfilling prophesy about keeping people with visual impairments underemployed.

Quotes Pertaining to Technology.

"Some employers think that the State Commission [on Blindness] will buy you equipment, but they only do that for the unemployed or those making less than $16,500."

"If you just make a little more than $16,500, and that's poverty level, an Arkenstone could be about $400 a month to pay back the loan over three years."

"Leisure time is really important, important enough that I bought an Arkenstone. At work I scan stuff into it and hook up a tape recorder. I spend my time on the train listening to the taped documents; also answer motions and write memos on Braille 'n Speak. Then I can download the Braille 'n Speak into the computer. I, thank God, had the ability to get the technology. It allows us to be a little more flexible with our time."

Domestic Activities

In general, people with visual impairments spend less time on domestic activities than sighted people do. These domestic activities include: household chores like cooking and cleaning; shopping for food, clothes, household goods, and services; sleeping; and child care. The *Time and Money Study* found that in each of the above categories, people who are legally blind spend less time on the average than their sighted peers do.

The lives of the focus group participants parallel the legally

blind respondents in the larger study when it comes to all types of domestic activities. A discussion of each of the components follows, with the exception of child care. This subject was not as heavily emphasized, since only two panelists were parents and their children were adults.
Based on both the qualitative and quantitative research, it is reasonable to surmise that people who are legally blind have fewer children rather than fewer hours to spend time with their children than sighted people do.

Household Chores (Home Maintenance, Repairs, Cleaning, Laundry)

The *Time and Money Study* found that women who are legally blind spend about the same amount of time on household chores as sighted women, while men with visual impairments spend less than both subsamples of women or sighted men. If any conclusion can be drawn from a small and unrepresentative sample, married men with visual impairments leave housework chores to other family members, given the slightest opportunity. Single men do some cooking, shopping, and laundry, but many have help from either a cleaning woman or a mother. Married women, on the other hand, revert to traditional female roles or rush in to fill a void. Both men and women said they spend a lot of time keeping things organized. However, when it comes to actual house cleaning, almost all of the women devoted considerable time to it and took pride in a clean house, whereas the men were either indifferent or more easily frustrated by the tasks.

The economic aspect of gender also emerged from these dialogues. Quite a few women said that they would "absolutely have someone clean" for them if they could afford it. In contrast, not one man mentioned that he would like to hire household help if he had the money (although a number of them already did). Affordability is either a real or perceived problem for women. It is very possible that the majority of these men did, in fact, earn more money than the women. On the other hand, it is conceivable that their incomes are comparable, but they allocate their financial resources differently. Men may just accept this as a necessary expenditure, while women prefer to spend their income on other budgetary items.

Quotes Pertaining to Household Chores.

"I don't do windows, dishes, ironing -- sighted members of my family do that. I defer to others, do a lot less than my share."

"My wife and daughter spoil me; I do very little cooking."

"I'm not domestic, my mother wasn't. When I was single, I didn't do a lot, but now I do things for my husband who was raised as a 'prince' -- he doesn't even know how to make coffee. So it depends on your living arrangement."

"I don't cook or go food shopping, that's what restaurants are for. I put all my time and energy into my business. I work a 14-hour day and let the house slide."

"Maybe if I were sighted, I would be disgusted by the way things look."

"Everything takes me so much longer that I get disgusted and just leave it for the cleaning woman. But on the weekends, I spend time cooking for the week. My biggest challenge is finding the mess friends leave, like ashes."

"A clean house means a lot to me. If I had sight, I'd be 'Miss Immaculate'. I feel good when the house is clean."

"I take one evening to cook for the week. People say my house is perfect."

"Blind women probably spend more time on chores, if you add in learning time. Sighted people can observe how something is done, but we have to practice to gain a skill."

"I live alone, so I do whatever has to be done. If two blind people live together they have the same problems, but if there's a sighted person around it cuts down on the domestic time you need to spend."

"There are many things that are easier for a sighted person to do, so when you're around one, they tend to do it."

"Sighted relatives complain about the amount of time it takes a blind person - it's easier for them to do it, but you have to be persistent."

"I do almost everything in the house myself. But once a month someone comes in to clean and get all the spots I missed. If I won the lottery, I'd have a housekeeper and a shopper."

"Mail and paper files are a big problem. I have to have someone sort out the bills from the junk mail, and then have someone read the important stuff."

"Don't spend time on child care, just dog care. This isn't pet care, a guide dog isn't discretionary and they're very time-consuming - grooming, feeding, walking."

Shopping for Goods and Services

The *Time and Money Study* found that women who are legally blind spend less time on shopping than sighted women. The consensus in the discussant groups is that shopping is a very visual activity. It requires not only the help of a sighted person, but a sighted person with a lot of patience. There are few alternatives (almost no brailled or taped catalogues and little in the way of interactive shopping services). Since visually impaired people are obliged to rely on others, they tend to shop only when necessary. This should not imply that they are content with the situation as it is; there is some low-level resentment from women about being deprived of a popular activity.

Quotes Pertaining to Shopping.

[male] "Food and clothes shopping takes a lot of time and necessitates a sighted person because they [store owners] always move things around. I need sighted help with clothing to mark it so I can identify it later. Unless you live with a sighted person, chores take a lot longer."

[female] "I do all my own stuff; half alone, half with sighted help. The supermarket provides someone to go up and down the aisles. For clothes, mostly, I know what I want. But, I need a lot of feedback to make sure I'm not missing out on anything. We have to spend more time when shopping, but much less time window shopping. Always feel I'm not being told or shown enough and I'm missing out. Even in restaurants, the waiters can't be bothered to read the whole menu."

[female] "I think we spend less time clothes shopping because we just go when we need something. Others go out every lunch hour and they always find something. We can't go window shopping."

[female] "My parents do a lot of my food shopping."

Sleeping

When told that, according to the large study, people who are legally blind sleep fewer hours than sighted people, almost everyone responded, "This is the first finding we agree with." The members of these groups are very active and busy people. They speculated that, because of discrimination, people who are legally blind who are innately high energy are the most likely to be working, and possibly have demanding jobs. Sighted people simply do not have all the complications of daily living and, therefore, do not have to have as dynamic a personality as a legally blind person to achieve the same status.

Two other reasons may be contributing factors as to why employment-oriented people who are legally blind get less sleep: They tend to overcompensate in all areas of their lives and they are very motivated to prove that they are better employees than sighted people. Many say that they arrive at the office earlier, stay later, and take more work home, which reduces the number of hours they have for leisure, as well as sleep. Also, a number of discussants cite the necessity of early morning walks with the dog, whether they are working at the moment or not.

Quotes Pertaining to Sleeping.

"We sleep less because our day is longer - there's so much more to do - work, domestic chores, so much preparation for work. By the time you get to your leisure time, it's midnight. Most blind [people] enjoy talking on the phone until all hours of the night. Then you need some time to unwind before you can fall asleep."

"I cram more into a day - commuting, work, karate, horseback riding,

mail, bills, dog walking - and then it's midnight and I get up at 4:30 or 5 a.m. We may get into the office earlier than sighted people to get a jump on the day."

"I only sleep two hours. I can't stop thinking about what needs to be done at work. I have a new girlfriend and that takes a lot of time."

"That's a real eye-opener, if you'll pardon the expression. I listen to books or talk shows at night, get to bed at one a.m., up at six. My dog gets more sleep than I do."

"College and grad[uate] school changed my sleeping habits - the amount of work cut into sleep. So does having to walk the dog first thing in the morning."

"I have to get up very early to give the dog a good walk before work."

"Not working right now, but still have to get up at six to walk the dog."

"I get up at two a.m. (newspaper dealer) and have to walk a mile to work because there are no buses at that hour."

"I only get about five hours of sleep."

"I sleep a lot, because I need to put more energy into work and the house."

Discretionary Activities

In their use of discretionary time, the two groups appear to be more similar to the *Time and Money Study* sighted sample than to the legally blind sample. Like the sighted peers, group members spend a lot of time on work activities and household chores and, consequently, have little leisure time.

When the group members were told that the average person with visual impairments in the study has more discretionary time than the average sighted person and that they spend most of it alone and at home, many repeated that the *Time and Money Study* data should be analyzed further. These findings seemed diametrically opposed to their own experience, and they felt that something had to be wrong. For instance, they thought that the availability of leisure time was probably affected by the number of people with visual impairments who were out of work when the time diary interviews were undertaken. They guessed that because it is much more difficult for non-urban people to get to movies, concerts, and meetings, they probably have little choice about staying home or going out. They also wondered if low income levels kept the respondents with visual impairments at home, since some pastimes are very costly.

Although they have little leisure time, the participants were very active people with many outside interests. None of the respondents mentioned relaxing and watching television for

entertainment. However, this finding does not indicate that quiet time does not have its place in the discussants' lives. Rather, they like to divide their time between social and solitary activities.

Quotes Pertaining to Discretionary Activities.

"I'm half and half. I enjoy being by myself with movies and books. I like going out to dinner, visiting with friends, and spending time with my nieces and nephews. I like plays and concerts, but I can't go a lot because of the money."

"I'm very social, but I also need time for myself."

Social Activities (Visiting, Movies, Sporting Events, Parties)

The group members had already commented that they, like the sighted peers in the Time and Money study, had little leisure time. Furthermore, what time they did have for socializing was spent on the same types of activities that sighted people would engage in. For instance, they told us:

"My wife and I go to restaurants around the city, go to concerts, take long walks."

"I've done singles courses, computer dating, church dances."

"Before I met my girlfriend, I used to go out dancing every night."

"I like spending my time having dinner with ladies, at workshops on metaphysics, and conventions on audio engineering."

"How much leisure time is spent trying to 'get something going' with dates? The pursuit of dates used to be 90% of my leisure time, now it's about 10 percent. It's not the 'hysterical hunt' it used to be."

The focus group discussants were asked if they associated with visually impaired or sighted friends. Almost all of the respondents had some friends who were legally blind and some who were sighted. Only a few preferred one group exclusively over the other. This discussion elicited some interesting ideas, one being that residents of housing for people who are legally blind do not seem to have as many opportunities for social relationships with sighted people. In addition, people with visual impairments and sighted people do not mix well socially, even when they have a friend who is legally blind in common.

Some examples of their responses to this question are:

"I socialize with both [groups of people] because I live at the Associated Blind [an apartment house for blind people], but my old friends are sighted."

"Almost all my friends are visually disabled because I live at the Associated Blind."

"I socialize with both, although my sighted friends are uncomfortable around my blind friends. My blind friends are doers and the others are jealous of their achievements."

"I socialize more with sighted people."

The group members did not seem to be easily discouraged from doing anything they chose. This topic, however, did stimulate conversation about discrimination and transportation issues, discussions of which follow. There was also a subtle suggestion that, had there been more time in the focus group sessions, the use of mobility aids should have been explored.

Discrimination in Social Activities

Discrimination in social activities emerged as a problem for those living in urban areas in the College-Plus group. Discrimination was considered in the context of talking about physically demanding diversions, such as working out in a gym or health club. Many group participants related stories about being denied membership opportunities and being strongly encouraged to go to facilities for the disabled.

This kind of subtle discrimination is being addressed by the recently legislated Americans with Disabilities Act (ADA). Given the difficulties of bringing suit, the legally blind people could benefit from a pointed public relations or educational campaign by state agencies for the visually impaired.

Quotes Pertaining to Discrimination.

"The blind don't have as many opportunities for social activities, like going to health clubs or riding academies."

"We're discriminated against at health clubs. The refrain we always get is 'Can't you people go to the Lighthouse?'"

"The public believes that there are agencies that provide these services, but with budget cuts, many programs have been discontinued."

"Suburban facilities are less discriminating than the city; perhaps [there is] no fear of being overwhelmed by the disabled. Also, there are no services for the blind out there, so they don't try to encourage you to go elsewhere. The 'Y' called me to say they have funds for classes for the blind."

"Even the 'Y' had to be persuaded to take me in the gym, they were reluctant because of insurance reasons. In the suburbs, the 'Y' may be more concerned with image in the community, in the city they're not. Suburban facilities don't feel as threatened by blind [people] because they have such limited exposure, so they're more open minded."

Transportation Restrictions

Mobility in the metropolitan area has its problems for sighted people, but can be especially cumbersome for independent minded people who are legally blind. Mass transit makes few special provisions for the people who are legally blind. Subway signs, even when they exist, cannot help and the public address systems are often inaudible. Some participants prefer buses, but bus schedules have been severely curtailed in some areas of the city.

Many people who are legally blind cannot afford private car services and many cab drivers refuse to pick up people with guide dogs. Furthermore, they do not have the option of driving themselves.

In the focus group, some of the participants exaggerate the usefulness of cars to sighted urbanites, and the number of sighted people who own cars. The participants have little concept of how few people in New York City have cars, and how going out at night in the city is a problem for all single women, with or without a car. The respondents were also not aware of how troublesome and time consuming a car can be in terms of parking, maintenance, etc.

Quotes Pertaining to Transportation.

"The biggest travel problem is the time on mass transit. A 15-minute car ride takes one to one and a half hours on buses because of the waiting time. Today I was late because the wrong train was on my track and there was no announcement."

"You can't take anything for granted with the subway. You always have to ask, even if it annoys people."

"The lack of public transportation in the suburbs means having to get a ride. Even in the outer boroughs a ten-minute car ride can be an hour bus ride."

"I force myself to take the subway; mostly it's buses."

"I take buses and cabs."

"Bus schedules are being cut back, which almost precludes going out at night."

"I have to ask directions a lot and that takes longer. Also, people don't know how to give directions to the blind and they can mislead you, although they mean well."

"Many cabs won't stop to pick us and our [guide] dogs up."

"Cabs - such discrimination against [guide] dogs."

"And a cab would cost me 20 dollars."

"I don't like going out at night because I don't have a car."

"Sighted single women get in a car at night."

"Oh, they just hop in the car."

"Travel time may be more extensive because we don't drive, and are totally dependent on public transportation. I don't have the luxury of hopping in the car; I have to walk home from the station."

"It takes longer for us to travel because we don't have a car."

Mobility Aids

The use of various kinds of mobility aids was not a topic of discussion in itself and few respondents mentioned them. Nonetheless, a pattern seemed to emerge. The more adventurous participants all possessed guide dogs, while those who were reluctant to go out at night and were less socially active did not own dogs. This indicates that there may be a correlation between participation in social activities, particularly at nighttime and guide dog-ownership. If the data were to be analyzed by the types of mobility aids being used, the results may highlight variations in life style and economic achievement.

Quotes Pertaining to Mobility Aid.

"I don't like walking in my neighborhood at night because I don't have a [guide] dog."

"I don't like going out at night because I don't have a car." [Does not have a dog]

"I don't do a lot of social activities because I don't like to travel." [Does not have a dog]

"I don't mind traveling a long distance to an activity I really like. And I'm much more comfortable with my [guide] dog than I ever was with a cane."

"I wouldn't go on the subway without the [guide] dog."

Solitary Activities

As previously discussed, the study established that the group members preferred to divide their limited leisure time between social and quiet activities. The study asked the participants what they thought of the expression "passive leisure," a term coined by time-allocation researchers Juster and Stafford (1985). The participants' reactions were divided between those having no particular objection and the rest feeling that the term has a negative connotation. The latter think that it is associated with isolation, advanced age, and the visually impaired stereotype.

Quotes Pertaining to Passive Leisure.

"Somebody who isolates themselves."

"The older blind [people are] more sedentary."

"Older blind [people] have little contact with people, sometimes because of multiple handicaps. Also, they don't know how to 'listen' to TV or don't know about taped books."

"Sighted people spend hours in front of the 'boob tube' [television]."

"I thought it meant sleep."

"Don't like the term because it reinforces the idea that we don't do anything. But I like passive leisure activities; I spend hours talking on the phone."

"You need some time alone."

"I like some quiet time with books, or on the phone, or listening to talk shows; I need reflection time."

"I need time to reflect; to think about problems at work."

"It depends on whether it's a free choice or imposed."

Perceived Barriers to Independence

Two additional findings were discovered in the quantitative study: Those who attended a residential high school spend more time on quiet activities and were less likely to have referred a sighted acquaintance for the matched sample. The members of both groups were asked what, if any, experience they had with residential schools and what their reactions to the findings were. During the discussion of residential schools, discussants spontaneously talked about what they called "the blind image" which led to observations about other barriers to independence.

No one was surprised by the results on residential schools. Almost all of the discussants were sure that these schools hampered normal social development, based on their personal experience or that of friends. Many of the discussants believe that children who go to residential schools are not taught to be independent and active members of society, but somehow are taught to "act blind" or "look blind." They feel that people who have gone through that educational system are left with what they call the "blind image," i.e., people who are excluded from the sighted world and are, therefore, isolated, dependent, and passive. There was an undercurrent of resentment because the discussants feel that the image is carelessly applied to them and creates obstacles in life.

One of the men in the College-Plus group told an amusing anecdote about the "blind image," which is the exception that proves the rule. "When I'm in my Coast Guard uniform, sighted people automatically assume my guide dog is a drug-sniffing dog or a guard dog because for them it's unthinkable that a blind person would have a commission."

Parents also sometimes undermine independence. They are faulted for not being able to cope with a child who is legally blind, and for failing to teach them important living skills. Some of the participants remarked that their parents found it easier to do things for them than to teach them. They picked up skills they needed and the ways of the sighted world through counseling and perseverance, although many felt their lives were more difficult because of the difficulty in learning later in life.

Quotes Pertaining to Barriers to Independence.

"I have a friend who was the only blind child in public school, but had an itinerant teacher. She has a great deal of independence and her orientation is toward having sighted friends. I went to a residential school and I can see a difference."

"My friend who went to a residential high school has the greater problem with social adjustments, by far. I suspect it dates back to that insulated life, whereas I was fortunate to be mainstreamed."

"Where I went to school I was the only blind person. People say, 'You don't act blind; you don't look blind.' It's because I grew up with the sighted and still stay with sighted people."

"My parents consciously mainstreamed me. I never knew another blind person until I went to college. Everybody says, 'You don't act blind; you don't fit the blind image.'"

"I went to public school with [a] resource room for braille and math skills. I had sighted buddies and was included in their activities. When I was skiing, a blindness professional said, 'You're not a typical blind person because you do more aggressive activities.' Certain blind people have poor orientation; they may be encouraged toward passive activities."

"The blind image may be imposed by residential schools."

"Students [at residential schools] are taught to act a certain way."

"Residential schools develop the ['blindness'] image and instill it."

"The ['blindness'] image is a function of the blind educational system."

"As a teacher in a residential school, I know there are students who don't get around very well. The parents didn't do too much with them."

"My family didn't motivate me; they didn't know what to do with a blind kid. I learned about how to function in the world through EST [Erhard Seminar Training] and AA [Alcoholics Anonymous]."

Summary and Implications

1. Participants believe that many sighted people fear others with visual disabilities, which prevents casual interactions with those who are visually impaired. This distance creates a barrier to seeing the visually impaired as ordinary people who can function as well as, or sometimes better than, the average person, as long as there are some provisions for their special needs.

2. The respondents believe that they work longer and harder than their sighted co-workers. They feel that they have something to prove, and that employers are getting the best when they hire people who are visually impaired. They also harbor feelings that sighted co-workers resent their achievements.

3. The quantitative findings on time use might be misleading because: (a) the higher unemployment rate of people with visual impairments is adversely affecting their time-use profile; (b) within the employed visually impaired population, there are segments who do not fit the "average."

4. The quantitative differences between respondents in the three vision categories (totally blind, visually impaired, sighted) should be analyzed by: (a) employment status at the time of the interviews; (b) respondents' full- or part-time employment; (c) type of community; (d) educational attainment; (e) the use of guide dogs vs. other mobility aids.

5. For people with visual impairments, technology is especially difficult. Many feel overwhelmed by the amount of time it takes to learn to use some new piece of equipment and simultaneously feel deprived by not having more state of the art apparatuses.

6. The *Time and Money Study* respondents' hours devoted to employment-related activities may be underestimated because various aspects of their day may not have been accounted for in the primary work activities: (a) time spent out of the office with readers, or brailling work-related reading materials (student work books, computer manuals, office directories); (b) time spent on courses learning new technologies; (c) time spent on courses needed to apply for certain jobs; (d) disproportionate number of teachers who officially work only six hours.

7. All people taking courses feel strongly that the time devoted to education is not discretionary, but mandatory and should be included under work-related activities.

8. When it comes to housework, men and women with visual impairments follow traditional gender roles: (a) married men defer to others, while married women rush in to fill a void; (b) married men and women do household chores, but men are much more nonchalant and women more conscientious; (c) single men also seem to rely more on paid cleaning help than do single women, either because they make more money or because they perceive it to be an essential expense.

9. Time spent on buying clothes is minimized because visually impaired discussants do so only when it is absolutely necessary. They cannot "window shop," by which they mean to fortuitously spot something and buy it.

10. The participants in both groups defy the averages: they spend more time on work and less time on leisure than those in the quantitative study sample. In these two respects, their time-use patterns are more similar to the sighted respondents than to the respondents with visual impairments in the larger study.

11. Unlike the average visually impaired respondent in the quantitative study who spends a disproportionate amount of time on solitary activities, or "passive leisure," as compared to the average sighted respondent, these discussants prefer to divide what little discretionary time they have more equally between social and solitary activities.

12. Most choose to have some quiet time by themselves to listen to talk shows and music, talk on the phone, or reflect on the day. The term "passive leisure" has proponents and opponents. Some discussants say that it is descriptive of the respondents' "reflection" time; others think the term reinforces the idea that people with visual impairments do not do anything.

13. There seem to be differences between the College-Plus and the High School-Plus groups with respect to their preferred social activities: (a) the former speaks of physically active hobbies like working out in health clubs, karate lessons, skiing, horseback riding, and flamenco dance classes; (b) the latter prefers to engage in less physically-active pastimes like dining out and going to movies, plays, concerts, and bingo.

14. Travel in the city and suburbs is a problem for the participants. Mass transit can take longer than a car because of waiting time, schedule cutbacks, indirect routes, and misleading directions. Car services are expensive and cabs discriminate against people with dogs.

15. The College-Plus group strongly believes that being mainstreamed is far superior to attending a residential school and that graduates of residential schools become the "stereotypical blind." This group also believes that people with visual impairments who were mainstreamed in education are more independent, more oriented toward sighted friends, better socially adjusted, and more likely to engage in active past times. They are often told that they

"don't act blind" or "don't fit the blind image."

References

Juster, F.T., & Stafford, F.P. (1985). *Time, goods, and well-being*. Ann Arbor, MI: Survey Research Center, Institute for Social Research, University of Michigan.

Appendix B
Data Collection Instruments

TIME AND MONEY
INTERVIEW 1

EXACT TIME NOW _____(AM/PM)

1. SUBJECT NUMBER | 0 | 1 | 7 | 1 | | | | | (1 2 3 4 5 6 7)
2. INTERVIEWER | b | | | (8 9 10)
3. REVIEWED BY | b | | (11 12)
4. INTERVIEW NUMBER | 1 | (13)
5. GENDER 1 = MALE 2 = FEMALE | b | | (14 15)
6. SOURCE OF SUBJECT | b | | | | (16 17 18 19)
7. INTERVIEW DATE | b | | | / | | / | | (20 21 22 23 24 25 26)
8. INTERVIEW DAY OF WEEK
M=1, Tu=2, W=3, Th=4, F=5, Sa=6, Su=7 | | (27)

Hello. Is this the _____ residence? If NO, TERMINATE WITH, LAST NAME "I'm sorry, I have the wrong number."
May I speak to _____? IF NOT AVAILABLE, GET A NAME OF RESPONDENT TIME TO CALL BACK.
This is _____ at the Rehabilitation Research and Training Center on
YOUR NAME
Blindness and Low Vision. I am calling from Mississippi State University in Starkville, Mississippi. We are doing a nation-wide research study to examine how blind and visually impaired people spend their time and money. Your name was drawn from a sample of the entire nation.

The questions I need to ask should take about twenty minutes. The answer you give will be kept confidential.
I HAVE READ THIS CONFIDENTIALITY STATEMENT TO THE RESPONDENT _____.YOUR SIGNATUR
This interview is completely voluntary. Whether or not you talk with me today is completely up to you. If there are any questions that you do not wish to answer, please tell me, and I will go on to the next question.

Before starting, I want you to know that I would be happy to answer any questions you might have about this study either now or later. Okay?
I want to begin by asking you some questions about your vision.

VISION SECTION

9. How old were you when your visual loss first began to affect your activities? b | | |
28 29 30
CODE ACTUAL AGE

BIRTH = 00 SKIP TO Q. 12

10. Was this vision loss from the result of an accident or an illness?

1 = ACCIDENT / INJURY b | |
2 = ILLNESS 31 32
3 = DOESN'T KNOW
4 = REFUSED TO ANSWER
5 = OTHER (EXPLAIN) _____
_____

11. Did your vision problems occur suddenly or gradually? |
33

1 = SUDDENLY
2 = GRADUALLY
3 = DOESN'T KNOW
4 = REFUSED TO ANSWER
5 = OTHER (SPECIFY) _____
_____

12. What is the name or diagnosis of your eye problem? b | | | | | |
FIRST MENTIONED 34 35 36 37 38 39
_____
_____

13. Are there any other eye diagnoses? b | | | | | |
40 41 42 43 44 45
_____
_____

14. What is your visual acuity for your right eye? 20 / b | | | | |
46 47 48 49 50
for your left eye? 20 / b | | | | |
51 52 53 54 55

0000 = TOTAL BLIND OR NO VISION – SKIP TO Q. 22
2000 = LIGHT PERCEPTION
0800 = COUNT FINGERS
0200 = 20 / 200
1600 = HAND MOTION
9999 = DON'T KNOW

16. Do you use glasses to help see? b | |
1 = YES 2 = NO 56 57

17. Do you use any other aids to help you see? b | |
1 = YES 58 59
2 = NO SKIP TO Q. 19

18. What else do you use? (SPECIFY) b | | |
60 61 62

_____

_____

_____

19. Are you able to see very small things clearly,
like ordinary newsprint or the tiny marks on b | |
a standard wrist watch? 63 64

1 = YES
2 = NO
3 = SOMETIMES
4 = OTHER (SPECIFY)_____

_____

_____

20. Are you able to see clearly at a distance?
For example, can you see well enough to recognize b | |
a friend walking on the other side of the street? 65 66

1 = YES
2 = NO
3 = SOMETIMES
4 = OTHER (SPECIFY) _____

_____

_____

0	2	7	1			
1	2	3	4	5	6	7

21. Can you see to move down steps? b | |
8 9

1 = YES
2 = NO
3 = SOMETIMES
4 = OTHER (SPECIFY) _____

_____

_____

22. Has getting to and from work or other places such as shopping, visiting, or attending church been a problem for you because of your vision? b | | 10 11

1 = YES
2 = NO
3 = SOMETIMES

23. Do you have health problems other than visual problems which affect your work or other daily activities? b | | 12 13

1 = YES
2 = NO SKIP TO Q. 25
3 = NOT CERTAIN SKIP TO Q. 25

24. What are they?

a) _____ | | | | | | | | 14 15 16 17 18 19 20

_____

_____

b) _____ | | | | | | | | 21 22 23 24 25 26 27

_____

_____

c) _____ | | | | | | | | 28 29 30 31 32 33 34

_____

_____

25. Next, I'll ask some questions about how you read. Do you usually read alone, have others read to you, or do no reading at all? ___|___|

35 36

1 = READ ALONE
2 = OTHERS READ TO ME
3 = DIVIDED EQUALLY BETWEEN ALONE AND OTHERS
4 = DO NO READING
5 = COULD NOT ANSWER

IF ANSWER 4 OR 5, PROBE: "Do you read your calendars, bills, invoices, or mail you receive or do you have someone read them to you? USE ANSWER TO CODE 1, 2, 3 or 4. IF 4 or 5, SKIP TO Q. 56.

26. I will read a list of ways that people read. Please tell me which ones you use. 1 = YES 2 = NO

a. Do you read with standard or regular print? ___|

37

b. Large print? ___|

38

c. Braille? ___|

39

d. Other types of print? SPECIFY _____ ___|

40

e. Do you use family members as readers? ___|

41

f. Friends or neighbors as readers? ___|

42

g. Volunteers or agency personnel as readers? ___|

43

h. Co-workers as readers? This includes readers ___|
paid by an employer. 44

i. Other readers? SPECIFY _____ ___|

45

j. Do you use voice output computer technology? ___|

46

k. Braille output device? ___|

47

l. Closed circuit television, CCTV? ___|

48

m. Cassettes or record players? ___|

49

n. High density special lightning? ___|

50

o. Do you use anything else to read? SPECIFY _____ ___|

51

IF ANSWER WAS NO (CODED 2) TO ALL OF THE QUESTIONS ABOUT READERS, Q. 26e to Q. 26i, SKIP TO Q. 56.

READING SECTION

0 | 3 | 7 | 1 | | | |
1 2 3 4 5 6 7

27. People use readers for a number of activities. I will read a list of some of these activities. Please tell me if you use your readers for the activity as I mention it.

1 = YES 2 = NO 3 = UNABLE/UNWILLING TO ANSWER

a. Do you use a reader for work or in your career? b | |
8 9

b. Education in your field? |
10

c. Other school or college classes? |
11

d. Pleasure, such as entertainment or hobbies? |
12

e. Current events in magazines or newspapers? |
13

f. Religion or Bible reading? |
14

g. Mail or monthly bills? |
15

h. Do you use a reader for any other reason? PROBE: "What |

is the reason?" _____ 16

_____

28. Are any of your readers paid for their services? b | |
1 = YES 17 18
2 = NO SKIP TO Q. 36

29. Are they paid entirely by you, entirely by someone else, or both you and someone else? b | |
19 20

1 = SELF (GO TO Q. 30)
2 = SOMEONE ELSE (GO TO Q. 31)
3 = SELF AND SOMEONE ELSE (GO TO Q. 33)

30. How much do <u>you</u> pay in an average week for reader services? b | | | |
CODE TO THE NEAREST DOLLAR AMOUNT. 21 22 23 24
GO TO Q. 36.

31. Since someone else pays for your reader services, would you mind telling me who that is? ___| 25

1 = YES (GO TO Q. 36)
2 = DON'T KNOW (GO TO Q. 36)
3 = NO

32. Who pays for your reader services?
CIRCLE ALL THAT APPLY

1 = FAMILY
2 = EMPLOYER
4 = VOCATIONAL REHABILITATION (VR)
8 = PRIVATE REHABILITATION AGENCY
16 = SCHOOL
32 = STATE AID FOR THE BLIND
64 = CHURCH
128 = OTHER (EXPLAIN) _____

___| ___| ___| 26 27 28

_____

_____

GO TO Q. 36

33. Since you and someone else pay for your reading services, would you mind telling me who the other person or agency is? ___| 29

1 = YES (GO TO Q. 36)
2 = DON'T KNOW (GO TO Q. 36)
3 = NO

34. Who helps you pay for reader services?
CIRCLE ALL THAT APPLY

___| ___| ___| 30 31 32

1 = FAMILY
2 = EMPLOYER
4 = VOCATIONAL REHABILITATION (VR)
8 = PRIVATE REHABILITATION AGENCY
16 = SCHOOL
32 = STATE AID FOR THE BLIND
64 = CHURCH
128 = OTHER (EXPLAIN) _____

35. How much do <u>you</u> pay in an average week for reader services?
CODE TO THE NEAREST DOLLAR AMOUNT.

b ___| ___| ___| ___| 33 34 35 36

36. Do you use or subscribe to any magazines or books on tape or records for the blind? b | | | (37 38)

1 = YES
2 = NO (GO TO Q. 39)

37. Do you pay for these services? b | | | (39 40)
1 = YES
2 = NO GO TO Q. 39

38. How much do you pay a year? b | | | | | (41 42 43 44)
CODE TO THE NEAREST DOLLAR AMOUNT.

39. Do your readers read to you in person or do they tape record material for you? CIRCLE ALL THAT APPLY. b | | | (45 46)
1 = READ IN PERSON
2 = TAPE RECORD
4 = BOTH
8 = OTHER (SPECIFY) _____

_____

40. Is any of your reading done in your home? | | (47)
1 = YES 2 = NO

41. Is any of your reading done in your place of work? | | (48)
1 = YES 2 = NO

42. Is any of your reading done in an agency for the blind? | | (49)
1 = YES
2 = NO GO TO Q. 45

43. How long does it take you to travel to the agency where the reading is done? | | | | | | (50 51 52)
RECORD MINUTES (1/2 HOUR = 030)

44. How many days in a month do you go to the agency to have your reading done? | | | | (53 54)
RECORD ACTUAL NUMBER (7 TIMES A MONTH = 07)

45. Is your reading done in any other places? | | (55)
1 = YES
2 = NO GO TO Q. 47

46. What place is it? _____ | | | | (56 57)

47. How long do you work with the reader in a typical reading session?
RECORD ACTUAL MINUTES (20 MINUTES = 020).

b			
58	59	60	61

48. Have you ever actively looked for or recruited a reader?

1 = YES
2 = NO (SKIP TO Q. 52)
3 = OTHER (EXPLAIN) _____

62

_____

49. About how long did it take you to find the last reader you looked for or recruited?
CONVERT TO NEAREST # OR WEEKS (1 MONTH = 04)

63	64

50. That last time, did you spend any money trying to find a reader, for example did you pay for an ad?

1 = YES
2 = NO GO TO Q. 52
3 = DON'T REMEMBER/REFUSE TO ANSWER GO TO Q. 52

65

51. How much money did you spend altogether?
CONVERT TO NEAREST DOLLAR

66	67	68

52. Have you ever had to spend time "training" readers, or teaching readers what you wanted them to do or how you wanted them to read?

1 = YES
2 = NO (SKIP TO Q. 54)
3 = DON'T REMEMBER/REFUSED TO ANSWER (SKIP TO Q. 54)

69

53. Altogether, about how many hours of reading time did it take before your last reader was "trained" to your satisfaction?
CODE ACTUAL NUMBER OF HOURS

0	4	7	1			
1	2	3	4	5	6	7

54. Do you have to spend any time making sure you have a reader when you need one?

1 = YES
2 = NO GO TO Q. 56 ___|
8

55. Each month, about how much time do you spend trying to arrange time with your reader(s)? ___|___|___|
CONVERT TO ACTUAL MINUTES 9 10 11

56. Now, I need to ask you two questions about your background. How old were you on your last birthday? ___|___|
CODE ACTUAL AGE 12 13

57. Are you presently working?

___|
14

1 = YES2 = NO

GO TO INTERVIEW 2 SET UP

INTERVIEW 2 SET UP

Thank you so much for answering these questions.
Now, we need to set up a time for our second interview. In our second interview, I will be asking you a few more questions about your visual disability. But mostly, I will be listening to you tell me what you did or how you spent your time on the day before my telephone call. I'll want you to tell me what you did over a 24 hour period.
Let me assure you again that this second interview is completely voluntary. Everything you tell me will be kept private.

I would like to telephone you on _____ at _____
o'clock (am/pm). DATE TIME

I will be asking you to tell me what you did on

_____, _____
WEEK DAY MONTH DAY

DIARY DATE

b							
15	16	17	18	19	20	21	
	MONTH		DAY		YEAR		

DAY OF WEEK

22	23		

M = 1, Tu = 2, W = 3, Th = 4, F = 5, Sa = 6, Su = 7

Will this time be OK with you?
1 = YES(SKIP TO NONBLIND PEER)
2 = NO

Since that time is no OK, may I call you back to reschedule, or would now be OK?

_____ at _____
DATE TIME

_____, _____
WEEK DAY MONTH DAY

DIARY DATE

24	25	26	27	28		
MONTH		DAY		YEAR		

DAY OF WEEK

29	

M = 1, Tu = 2, W = 3, Th = 4, F = 5, Sa = 6, Su = 7

SIGHTED PEER SECTION

We would like to ask a sighted person you know, some of the same questions we will ask you. We will not be asking that person any questions about you. The interview with the sighted person will not be as long as your interview. We will pay that individual $25.00 for the five interviews just as we are paying you.

The individual you identify should not live in your household, should be of the same sex, should be within ten years of your age, and should have similar living arrangements as you, that is, lives with someone or lives alone. It can be a friend or a relative as long as he or she is not disabled, does not live in your household, is the same sex as you, is about your age, and has similar living arrangements.

Do you think you will be able to help us out with this?

1 = YES
2 = NO TIME_____
3 = CALL BACK WHEN?
DATE_____

We need to know the person's name and telephone number in order to contact them.

NAME _____

TELEPHONE # _____

Do you have any questions about the interview?

_____

_____

I will be sending you a check for $10.00 after the completion of the second interview. Where would you like the check sent?

NAME_____

ADDRESS _____

_____

_____

Thank you again for answering these questions. This information will be very helpful. I look forward to talking with you on _____
INTERVIEW DATE
about what you did on _____.
DIARY DATE

Good-bye.

EXACT TIME NOW _____ (AM/PM).

TIME AND MONEY
INTERVIEW 2

EXACT TIME NOW _____ (AM/PM)

a. SUBJECT NUMBER 0 | 1 | 7 | 2 | | | |
1 2 3 4 5 6 7

b. INTERVIEWER b | | |
8 9 10

c. REVIEWED BY b | |

d. INTERVIEW NUMBER 2 |

e. DIARY DAY OF WEEK b | |
M=1, Tu=2, W=3, Th=4, F=5, Sa=6, Su=7

f. DIARY MONTH AND DAY b | | | / | |

g. INTERVIEW DATE b | | | / | | / | |

h. INTERVIEW DAY OF WEEK |
M=1, Tu=2, W=3, Th=4, F=5, Sa=6, Su=7

May I speak to _____? IF NOT AVAILABLE, GET A TIME TO CALL BACK.

This is _____ from the Research and Training Center at Mississippi State University. I want to thank you for agreeing to talk with me about your visual problems and how you have been using your time.
Before I begin asking you to recall how you spent your time on _____, I'd like to ask you a few more questions.
(DIARY DATE)

THIS STATEMENT MUST BE READ TO ALL RESPONDENTS:

This interview is completely voluntary and confidential. If we come to a question that you don't want to answer, please tell me, and we will go on to the next question.
Is it all right to begin asking you questions?

I HAVE READ THIS CONFIDENTIALITY STATEMENT TO THE RESPONDENT _____.
YOUR SIGNATURE

PERSONAL CARE

We want to ask you about some of your daily activities. We are interested in these so we can have a better understanding of how you spend your time. For each activity I want to know if you usually do the activity by yourself, have someone else do it, or do the activity with help from another person. O.K.?
Let's begin with walking.
1 = YES 2 = NO 8 = NA

INTERVIEWER: IF THEY ANSWER "SOMETIMES", THEN CODE YES (1).

Activity	Do you usually do it by yourself?	Do you ever do it with help from another person?	Do you ever have someone else do it for you?
i. Walk a block	___ | 29	___ | 30	8 | 31
j. Take a bus or other public transportation	___ | 32	___ | 33	8 | 34
k. Put away groceries	___ | 35	___ | 36	___ | 37
l. Prepare meals	___ | 38	___ | 39	___ | 40
m. Clean the house or apartment	___ | 41	___ | 42	___ | 43
n. Do household repairs	___ | 44	___ | 45	___ | 46
o. Mow the grass or do yard or garden maintenance	___ | 47	___ | 48	___ | 49
p. Shaving, bathing, or other personal care activities	___ | 50	___ | 51	___ | 52

Activity	Do you usually do it by yourself?	Do you ever do it with help from another person?	Do you ever have someone else do it for you?
q. Balance checking account	___| 53	___| 54	8 | 55
r. Wash clothes	___| 56	___| 57	8 | 58
s. Pay household bills	___| 59	___| 60	___| 61
t. Select or match clothes	___| 62	___| 63	___| 64
u. Shop for major household purchases, for example, stove, refrigerator, TV	___| 65	___| 66	___| 67
v. Feed and groom pets	___| 68	___| 69	___| 70
w. Look after or supervise children	___| 71	___| 72	___| 73
x. Ordinary Maintenance on automobile, such as checking oil or filling with gasoline	___| 74	___| 75	___| 76

0	2	7	2				
1	2	3	4	5	6	7	

MOBILITY SECTION

We want to learn about how you get around or travel in your home, at work, and in your community. We are interested in the kinds of aids, you might use to get around. The kinds of aids that we are interested in include the white cane, guide dog, laser cane (such as the mowat sensor), and sighted guide. A sighted guide is a person who helps you get from place to place.

y. Do you use any mobility aids? PROBE: "Such as a cane." b | | (8 9)

1 = YES
2 = NO GO TO Q. 36, TRANSPORTATION SECTION

z. How many different mobility aids do you use? | | (10 11)

aa. Do you use a mobility aid at work? | (12)

1 = YES
2 = NO GO TO Q. 29

bb. What mobility aid do you use most frequently <u>at work?</u> b | | (13 14)
READ LIST IF NECESSARY

1 = GUIDE DOG
2 = CANE
3 = SIGHTED GUIDE
4 = MOWAT SENSOR (LASER)
5 = NOTHING
6 = OTHER (SPECIFY) _____
_____

cc. Do you use a mobility aid to go to and from work? | (15)

1 = YES
2 = NO GO TO Q. 31

dd. What kind of mobility aid do you use most frequently as you <u>go to and from work</u>? READ LIST IF NECESSARY | (16)

1 = GUIDE DOG
2 = CANE
3 = SIGHTED
4 = MOWAT SENSOR (LASER)
5 = NOTHING
6 = DRIVEN TO WORK

7 = OTHER (SPECIFY) _____

_____

ee. Do you use a mobility aid inside your home? ___|
17

1 = YES

2 = NO GO TO Q. 33.

ff. What mobility aid you use most frequently inside your home? b |___|
18 19

READ LIST IF NECESSARY

1 = GUIDE DOG
2 = CANE
3 = SIGHTED GUIDE
4 = MOWAT SENSOR (LASER)
5 = NOTHING
6 = OTHER (SPECIFY) _____

_____

_____

gg. Do you use a mobility aid in your neighborhood? ____|
20

1 = YES

2 = NO GO TO Q. 35

hh. What mobility aid do you most frequently use in your neighborhood? b |___|
21 22

READ LIST IF NECESSARY.

1 = GUIDE DOG
2 = CANE
3 = SIGHTED GUIDE
4 = MOWAT SENSOR (LASER)
5 = NOTHING
6 = OTHER (SPECIFY) _____

_____

_____

ii. About how much a year do you spend for these mobility aids? Be sure to include money for vet bills, food for guide dogs, and equipment purchase and replacement costs. b |___|___|___|___|
23 24 25 26 27

CODE TO THE NEAREST DOLLAR

9988 = DON'T KNOW
9999 = EXCESS OF $10,000

TRANSPORTATION SECTION

Now, I would like to ask you about your transportation arrangements and needs.

jj. Does your vision condition cause transportation problems that prevent you from doing things you'd like to do?

1 = YES
2 = SOMETIMES
3 = NO GO TO Q. 38

b | | (28 29)

kk. I am going to read a list of transportation problems that some people experience in traveling. Please tell me if they are problems for you.

READ ALL CHOICES AND CIRCLE ALL THAT APPLY

1 = YES 2 = NO 3 = SOMETIMES

a. No one is available to drive me even if I pay. b | | (30 31)

b. No one is available to drive me because I can't pay. b | | (32 33)

c. Public transportation is too expensive. b | | (34 35)

d. Public transportation is not available. b | | (36 37)

PROBE: "too far, doesn't exist"

e. Public transportation is not reliable. b | | (38 39)

f. Handilifts or specialized vans for disabled persons are stigmatizing, expensive, or unreliable. b | | (40 41)

g. Taxi service is too expensive or inaccessible. | (42)

h. Other (SPECIFY) _____ | (43)

_____

ll. What time of transportation do you <u>most frequently</u> use to get to work? b | | (44 45)

READ LIST IF NECESSARY.

1 = BEING DRIVEN IN A PRIVATE AUTOMOBILE
2 = BUS OR TRAIN
3 = TAXI OR CAR SERVICE
4 = HANDILIFT (SPECIALIZED VANS FOR DISABLED PERSONS)
5 = WALKS TO WORK
6 = NONE

7 = WORKS AT HOME
8 = OTHER (SPECIFY)_____

_____

mm. When you have errands such as shopping, what type of transportation do you use most frequently? b | | | 46 47

1 = BEING DRIVEN IN A PRIVATE AUTOMOBILE
2 = BUS OR TRAIN
3 = TAXI OR CAR SERVICE
4 = HANDILIFT (SPECIALIZED VANS FOR DIABLED PERSONS)
5 = WALKS TO WORK
6 = NONE
7 = OTHER (SPECIFY) _____

_____

nn. What do you pay on a weekly basis for your transportation to work? b | | | | | 48 49 50 51
CODE TO THE NEAREST DOLLAR

oo. Do you receive a special note or discount for the disabled? b | | | 52 53

1 = YES
2 = NO
3 = DON'T KNOW
4 = OFFERED ONE, BUT REFUSED IT

pp. What do you pay a week for your other transportation needs? PROBE: "For example, when you go shopping" b | | | | | 54 55 56 57
CODE TO THE NEAREST DOLLAR

998 = DON'T KNOW

Thank you for telling me about your transportation and mobility. Are there other things that I should know about your transportation and mobility experiences?

_____

_____

_____

_____

_____

0	3	7	2			
1	2	3	4	5	6	7

AIDS/ADAPTATIONS SECTION

Now that we have talked about mobility and aids and transportation, I'd like to ask some questions about other kinds of equipment, aids, or appliances you use to do the things you want to do at home or at work.

I will read the name of an aid or device that has been designed for use by people with a visual disability. Then I want to know if you use it, where you use it, if you received training to use it, and who purchased the aid? O.K.?
Let's begin with
PLACE 1 IN AS MANY BLANKS AS APPLY
1 = YES 2 = NO

Do you use		Do you use it at home or at work?		Did you receive training to use it?	Who paid for it? CODE 1 FOR ALL THAT APPLY.	
qq. Large Print, Talking, or Braille clocks or watches?	___|	HOME	___|	___|	SELF	___|
		WORK	___|		VR	___|
		OTHER	___|		FAMILY	___|
					EMPLOYER	___|
					OTHER	___|
rr. Adapted games, sports equipment, or other recreation aids – such as Monopoly, playing cards, a bowling rail, large type crossword puzzle, metronome?	___|	HOME	___|	___|	SELF	___|
		WORK	___|		VR	___|
		OTHER	___|		FAMILY	___|
					EMPLOYER	___|
					OTHER	___|

Do you use		Do you use it at home or at work?		Did you receive training to use it?		Who paid for it? CODE 1 FOR ALL THAT APPLY.	
ss. Specially adapted major kitchen appliances such as a microwave oven or an electromagnetic stove?	___|	HOME	___|	___|		SELF	___|
		WORK	___|			VR	___|
		OTHER	___|			FAMILY	___|
						EMPLOYER	___|
						OTHER	___|
tt. Small kitchen appliances or special utensils such as electric frying pan with brailled heat control, the Magna Wonder Knife, or a specially adapted liquid warmer?	___|	HOME	___|	___|		SELF	___|
		WORK	___|			VR	___|
		OTHER	___|			FAMILY	___|
						EMPLOYER	___|
						OTHER	___|
uu. Other household or personal items such as self – threading needles a large print or tactual push button phone attachment, an adjustable book stand, specially adapted weighing scale, or a low vision or braille thermostat?	___|	HOME	___|	___|		SELF	___|
		WORK	___|			VR	___|
		OTHER	___|			FAMILY	___|
						EMPLOYER	___|
						OTHER	___|
vv. Closed circuit Television (CCTV) such as the Apollo or V-Tech Voyager?	___|	HOME	___|	___|		SELF	___|
		WORK	___|			VR	___|
		OTHER	___|			FAMILY	___|
						EMPLOYER	___|
						OTHER	___|

0 | 3 | 7 | 2 | | | |

Do you use		Do you use it at home or at work?		Did you receive training to use it?		Who paid for it? CODE 1 FOR ALL THAT APPLY.	
			1		2		3
ww. Magnifying or enlarging equipment such as magnifying mirrors or TV screen enlarger?		HOME		HOME		SELF	
		WORK		WORK		VR	
		OTHER		OTHER		FAMILY	
						EMPLOYER	
						OTHER	
xx. Special lighting such as high intensity lamps or lights?		HOME				SELF	
		WORK				VR	
		OTHER				FAMILY	
						EMPLOYER	
						OTHER	
yy. Specially adapted cassette tape recorders such as a voice activated tape recorder or one that can play Library of Congress Format Tapes?		HOME				SELF	
		WORK				VR	
		OTHER				FAMILY	
						EMPLOYER	
						OTHER	
zz. Labeling aids or equipment such as a braille labeler or Hi-Marks?		HOME				SELF	
		WORK				VR	
		OTHER				FAMILY	
						EMPLOYER	
						OTHER	

Do you use	Do you use it at home or at work?	Did you receive training to use it?	Who paid for it? CODE 1 FOR ALL THAT APPLY.
aaa. Machine for handling money such as a talking paper money identifier or talking cash register?	___|	HOME ___| ___|	SELF ___|
		WORK ___|	VR ___|
		OTHER ___|	FAMILY ___|
			EMPLOYER ___|
			OTHER ___|
bbb. Perkins Brailler or a slate and stylus?	___|	HOME ___| ___|	SELF ___|
		WORK ___|	VR ___|
		OTHER ___|	FAMILY ___|
		EMPLOYER ___|	
		OTHER ___|	
ccc.“Paperless” Braille equipment such as the VersaBraille?	___|	HOME ___| ___|	SELF ___|
		WORK ___|	VR ___|
		OTHER ___|	FAMILY ___|
			EMPLOYER ___|
			OTHER ___|
ddd. Hand-writing aids such as signature or check writing guide, raised line paper or checks, or raised line drawing kit?	___|	HOME ___| ___|	SELF ___|
		WORK ___|	VR ___|
		OTHER ___|	FAMILY ___|
			EMPLOYER ___|
			OTHER ___|

Do you use		Do you use it at home or at work?		Did you receive training to use it?		Who paid for it? CODE 1 FOR ALL THAT APPLY.	
eee. Devices that assist with health care such as talking blood pressure & pulse monitoring kit, a talking glucose meter, or a talking thermometer?	___|	HOME	___|	___|	SELF	___|	
		WORK	___|		VR	___|	
		OTHER	___|		FAMILY	___|	
					EMPLOYER	___|	
					OTHER	___|	
fff. Other health care or personal safety aids, such as a specially adapted insulin syringe, a bathtub safety bar, or an audible door guard?	___|	HOME	___|	___|	SELF	___|	
		WORK	___|		VR	___|	
		OTHER	___|		FAMILY	___|	
					EMPLOYER	___|	
					OTHER	___|	
ggg. Special or adapted tools or instruments, such as a light probe, micrometer, saw or drill guide, or a tactual rule, for example, a telescopic click rule?	___|	HOME	___|	___|	SELF	___|	
		WORK	___|		VR	___|	
		OTHER	___|		FAMILY	___|	
					EMPLOYER	___|	
					OTHER	___|	
hhh. Specially adapted educational aids such as a raised globe?	___|	HOME	___|	___|	SELF	___|	
		WORK	___|		VR	___|	
		OTHER	___|		FAMILY	___|	
					EMPLOYER	___|	
					OTHER	___|	

Do you use		Do you use it at home or at work?		Did you receive training to use it?	Who paid for it? CODE 1 FOR ALL THAT APPLY.	
iii. Talking Calculator?	___|	HOME	___|	___|	SELF	___|
		WORK	___|		VR	___|
		OTHER	___|		FAMILY	___|
					EMPLOYER	___|
					OTHER	___|
jjj. Special Identification Card instead of driver's license? PROBE: "non driver's driver license"	___|	HOME	___|	___|	SELF	___|
		WORK	___|		VR	___|
		OTHER	___|		FAMILY	___|
					EMPLOYER	___|
					OTHER	___|
kkk. Do you use a computer? 1 = YES 2 = NO GO TO Q. 68	___|	HOME	___|	___|	SELF	___|
		WORK	___|		VR	___|
		OTHER	___|		FAMILY	___|
					EMPLOYER	___|
					OTHER	___|
lll. Does your Computer have speech output?	___|	HOME	___|	___|	SELF	___|
		WORK	___|		VR	___|
		OTHER	___|		FAMILY	___|
					EMPLOYER	___|
					OTHER	___|

Do you use		Do you use it at home or at work?		Did you receive training to use it?	Who paid for it? CODE 1 FOR ALL THAT APPLY.	
mmm.	Does your computer have large print output?	___|	HOME ___|	___|	SELF	___|
			WORK ___|		VR	___|
			OTHER ___|		FAMILY	___|
					EMPLOYER	___|
					OTHER	___|
nnn.	Does your computer have a braille printer?	___|	HOME ___|	___|	SELF	___|
			WORK ___|		VR	___|
			OTHER ___|		FAMILY	___|
					EMPLOYER	___|
					OTHER	___|
ooo.	Does your computer have specialized software for the blind?	___|	HOME ___|	___|	SELF	___|
			WORK ___|		VR	___|
			OTHER ___|		FAMILY	___|
					EMPLOYER	___|
					OTHER	___|
ppp.	Do you use any other aids? (SPECIFY) _____ _____ _____	___|	HOME ___|	___|	SELF	___|
			WORK ___|		VR	___|
			OTHER ___|		FAMILY	___|
					EMPLOYER	___|
					OTHER	___|

IF THE RESPONDENT DID NOT USE ANY EQUIPMENT, AIDS, OR APPLIANCES SKIP TO DIARY SECTION.

qqq. Which of the following categories best describes the cost of aids you use at work?

b | | | | | |

0 = $0
50 = $1 – $100
176 = $101 – $250
376 = $251 – $500
751 = $501 – $1000
1501 = $1001 – $2000
3501 = $2001 – $5000
6500 = Greater than $5000
9999 = DON'T KNOW
9998 = USES NO AIDS AT WORK

rrr. How much did you and/or your family pay for the aids you use at work? This does not include the amount paid for you by your employer or an agency.

READ CATEGORIES IF NECESSARY. b | | | | | |

0 = $0
50 = $1 – $100
176 = $101 – $250
376 = $251 – $500
751 = $501 – $1000
1501 = $1001 – $2000
3502 = $2001 – $5000
6501 = Greater than $5000
10000 = DON'T KNOW
9999 = USES NO AIDS AT WORK

sss. About how much did all of these adaptations and equipment you use at home cost?

READ CATEGORIES IF NECESSARY. b | | | | | |

0 = $0
50 = $1 – $100
176 = $101 – $250
376 = $251 – $500
751 = $501 – $1000
1501 = $1001 – $2000
3501 = $2001 – $5000
6500 = Greater than $5000
9999 = DON'T KNOW
9998 = USES NO AIDS AT WORK

ttt. How much did you and/or your family pay for those aids you use at home? This does not include any amounts paid by an agency or by a nonfamily member.

READ CATEGORIES IF NECESSARY. b | | | | |

1 = $0
51 = $1 – $100
177 = $101 – $250
377 = $251 – $500
752 = $501 – $1000
1502 = $1001 – $2000
3502 = $2001 – $5000
6501 = Greater than $5000
10000 = DON'T KNOW
9999 = USES NO AIDS AT WORK

Thank you for telling me about the aids, equipment, and other appliances you use. Are there other things I need to know to better understand how you use aids?

_____
_____
_____
_____

0 | 8 | 7 | 2 | | | |
1 2 3 4 5 6 7

Diary Section

It is now time to ask you questions about how you spent your time on

_____

DAY OF WEEK, MONTH DATE

I will begin at 12:01 a.m. (one minute past midnight).

BEGIN AT QUESTION 1 – COLUMN A

Interview 3 Set Up

Thank you so much for answering these questions. This information will be very helpful in understanding how people who are blind or visually impaired use their time and how they allocate their resources.

Now we need to set up a time for our third interview. I will be listening to you tell me what you did or how you spent your time on the day before my telephone call. I will want you to tell what you did over a 24 hour period.

Let me assure you again that the third interview is completely voluntary. Everything you tell me will be kept private.

I would like to telephone you on _____ at _____ o'clock (pm/am).
DATE TIME

I will be asking you to tell me what you did on _____,_____.
WEEK DAY MONTH DAY

DIARY DATE b |__|__|__|__|__|__|__|
MONTH DAY YEAR

DAY OF WEEK ____|___|

M=1, Tu=2, W=3, Th=4, F=5, Sa=6, Su=7

Will this time be okay with you?

1 = YES
2 = NO

Since that time is not okay, may I call you to reschedule or would now be OK?

RESCHEDULE TIMES

_____ _____ a.m./p.m.
DATE TIME

_____ _____
WEEK DAY MONTH DAY

DIARY DATE b |__|__|__|__|__|__|__|
MONTH DAY YEAR

DAY WEEK (M=1, Tu=2, W=3, Th=4, F=5, Sa=6, Su=7) __|__|

Thank you again for answering these questions. This information will be very helpful. I look forward to talking with you on _____ about what you did on _____.
INTERVIEW DATE DIARY DATE

A check for $10.00 will be sent to you in the next few days to this address.

READ ADDRESS. Is this address correct?

Thank you.

Good-bye.

EXACT TIME NOW _____(AM/PM)

TIME ANDMONEY
INTERVIEW 3

EXACT TIME NOW _____(AM/PM)

1. SUBJECT NUMBER 0 | 1 | 7 | 3 | | | |
2. INTERVIEWER b | | |
3. REVIEWED BY b | | |
4. INTERVIEW NUMBER 3 |
5. DIARY DAY OF WEEK b | |

M=1, Tu=2, W=3, Th=4, F=5, Sa=6, Su=7

6. DIARY MONTH AND DAY b | | | | |
7. INTERVIEW DATE b | | | / | | / | |
8. INTERVIEW DAY OF WEEK |

M=1, Tu=2, W=3, Th=4, F=5, Sa=6, Su=7

_____

May I speak to _____? IF NOT AVAILABLE, GET A TIME TO CALL BACK.

This is _____ from the Research and Training Center at Mississippi State University. I want to thank you for agreeing to talk with me about your visual problems and how you have been using your time.

Before I begin asking you to recall how your time on _____, I'd like to ask you a few more questions. DIARY DATE

THIS STATEMENT MUST BE READ TO ALL RESPONDENTS:

This interview is completely voluntary and confidential. If we come to a question that you don't want to answer, please tell me, and we will go on to the next question. Is it all right to begin asking you questions about your education?

I HAVE READ THIS CONFIDENTIALITY STATEMENT TO THE RESPONDANT _____.
YOUR SIGNATURE

EDUCATION SECTION

9. What is the highest level of education you completed? b | | |

00 = RECEIVED NO EDUCATION – SKIP TO DIARY SECTION
01-12 = ACTUAL GRADE LEVEL
14 = COMPLETED TRADE SCHOOL, VOCATIONAL SCHOOL, OR JUNIOR COLLEGE
16 = COMPLETED BA/BS COLLEGE
18 = COMPLETED MA/MS COLLEGE
20 = COMPLETED DOCTORAGE
99 = MISSING

10. During your elementary education, did you attend a residential or a non residential school? PROBE: "Where you spent the majority of your time." b | |

1 = RESIDENTIAL
2 = COMMUTE

11. Were you a resident or did you commute? b | |

1 = RESIDENTIAL
2 = COMMUTE

12. Was this a school for the blind? b | |

1 = YES GO TO Q. 17, IF MORE EDUCATION
2 = NO

13. Did this school offer any special services for visually impaired students? b | |

1 = YES
2 = NO GO TO Q. 17, IF MORE EDUCATION

14. Did this school have b | |

1 = an itinerant or traveling teacher for visually impaired students,
2 = a vision resource teacher assisting in the regular classroom, or
3 = separate classes for visually impaired students?
4 = DON'T REMEMBER
5 = OTHER (SPECIFY) _____

_____

IF RESPONDENT RECEIVED NO MORE EDUCATION, GO TO DIARY SECTION

15. Did this school offer any special services for visually impaired students? b | |
    1 = YES
    2 = NO GO TO Q. 17, IF MORE EDUCATION

16. Did this school have b | |
    1 = an itinerant or traveling teacher for visually impaired students,
    2 = a vision resource teacher assisting in the regular classroom, or
    3 = separate classes for visually impaired students?
    4 = DON'T REMEMBER
    5 = OTHER (SPECIFY) _____

_____

IF RESPONDENT RECEIVED NO MORE EDUCATION, GO TO DIARY SECTION

17. During your secondary or junior or high school education, did you attend a residential or a nonresidential school? PRODE: "Where you spent the majority of your time." b | |
    1 = RESIDENTIAL
    2 = NONRESIDENTIAL GO TO Q. 22

18. Where you a resident or did you commute? b | |
    1 = RESIDENT
    2 = COMMUTE

19. Was this a school for the blind? b | |
    1 = YES GO TO Q. 24, IF MORE EDUCATION
    2 = NO

20. Did this school offer any special services for visually impaired students? b | |
    1 = YES GO TO Q. 24, IF MORE EDUCATION
    2 = NO

21. Did this school have b | |
    1 = an itinerant or traveling teacher for visually impaired students
    2 = a vision resource teacher assisting in the regular classroom, or
    3 = separate classes for visually impaired students?
    4 = DON'T REMEMBER
    5 = OTHER (SPECIFY) _____

_____

IF RESPONDENT RECEIVED NO MORE
EDUCATION, GO TO DIARY SECTION

22. Did this school offer any special services for visually impaired students? b | |
    1 = YES
    2 = NO GO TO Q. 24, IF MORE EDUCATION

23. Did this school have b | |
    2 = an itinerant or traveling teacher for visually impaired students,
    3 = a vision resource teacher assisting in the regular classroom, or
    4 = separate classes for visually impaired students?
    5 = DON'T REMEMBER
    6 = OTHER (SPECIFY) _____

_____

IF RESPONDENT RECEIVED NO MORE
EDUCATION, GO TO DIARY SECTION

24. COLLEGE ATTENDEES ONLY!

What was your major in college (and graduate school)?
CONTINUE ASKING UNTIL HIGHEST LEVEL OF EDUCATION IS REACHED.

_____	Non Graduate	__| __|
_____	BA/BS College	__| __|
_____	MA/MS College	__| __|
_____	MD, Ph.D., or LLD	__| __|

0 | 2 | 7 | 3 | | | |

25. While you were in college or graduate school did you receive help from a public agency such as a vocational rehabilitation? b |___|

1 = YES
2 = NO SKIP TO Q. 27

26. What kind of help did you receive from a public agency? b |___|___|

_____

_____

_____

27. While you were in college or graduate school did you pay for special services such as a reader? ___|

1 = YES
2 = NO SKIP TO Q. 29

28. What services related to your visual disability did you pay for?

FIRST MENTION _____ ___|___|

_____

_____

SECOND MENTION _____ ___|___|

_____

_____

THIRD MENTION _____ ___|___|

_____

_____

29. BA/BS DEGREE EARNERS ONLY! ___|___|

How many years did it take you to earn your BA or BS degree?
RECORD ACTUAL NUMBER OF YEARS.

Diary Section

It is now time to ask you questions about how you spent your time on

_____
DAY OF WEEK, MONTH DATE

I will begin at 12:01 a.m. (one minute past midnight).

BEGIN AT QUESTION 1 – COLUMN A

Interview 4 Set Up

Thank you so much for answering these questions. This information will be very helpful in understanding how people who are blind or visually impaired use their time and how they allocate their resources.

Now we need to set up a time for our fourth interview. I will be listening to you tell me what you did or how you spent your time on the day before my telephone call. I will want you to tell me what you did over a 24 hour period.

Let me assure you again that the fourth interview is completely voluntary. Everything you tell me will be kept private.

I would like to telephone you on _____ at _____
o'clock (pm/am). DATE TIME

I will be asking you to tell me what you did on _____,_____.
WEEK DAY MONTH DAY

DIARY DATE b |__|__|__|__|__|__|__|
MONTH DAY YEAR

DAY OF WEEK ____|___|

M=1, Tu=2, W=3, Th=4, F=5, Sa=6, Su=7

Will this time be okay with you?

1 = YES
2 = NO

Since that time is not okay, may I call you to reschedule or would now be OK?

RESCHEDULE TIMES

_____ _____ a.m./p.m.
DATE TIME

_____ _____
WEEK DAY MONTH DAY

DIARY DATE b |__|__|__|__|__|__|__|
MONTH DAY YEAR

DAY WEEK (M=1, Tu=2, W=3, Th=4, F=5, Sa=6, Su=7) |__|__|

Thank you again for answering these questions. This information will be very helpful. I look forward to talking with you on _____ about what you did on _____.
INTERVIEW DATE DIARY DATE

Thank you.

Good-bye.

EXACT TIME NOW _____(AM/PM)

TIME ANDMONEY
INTERVIEW 4

EXACT TIME NOW _____(AM/PM)

1. SUBJECT NUMBER 0 | 1 | 7 | 4 | | | |

2. INTERVIEWER b | | |

3. REVIEWED BY b | | |

4. INTERVIEW NUMBER 4 |

5. DIARY DAY OF WEEK b | |
M=1, Tu=2, W=3, Th=4, F=5, Sa=6, Su=7

6. DIARY MONTH AND DAY b | | | | |

7. INTERVIEW DATE b | | | / | | / | |

8. INTERVIEW DAY OF WEEK |
M=1, Tu=2, W=3, Th=4, F=5, Sa=6, Su=7

_____

May I speak to _____? IF NOT AVAILABLE, GET A TIME TO CALL BACK.

This is _____ from the Research and Training Center at Mississippi State University. I want to thank you for agreeing to talk with me about your visual problems and how you have been using your time.

Before I begin asking you to recall how your time on _____, I'd like to ask you a few more questions. DIARY DATE

THIS STATEMENT MUST BE READ TO ALL RESPONDENTS:

This interview is completely voluntary and confidential. If we come to a question that you don't want to answer, please tell me, and we will go on to the next question. Is it all right to begin asking you questions about your education?

I HAVE READ THIS CONFIDENTIALITY STATEMENT TO THE RESPONDANT _____.
YOUR SIGNATURE

EMPLOYMENT SECTION

Now, I'd like to ask you some questions about your employment history.

9. Since you were 18 years old, how many hears have you worked for pay?
CODE ACTUAL NUMBER OF YEARS WORKED. b | | |

00 = NONE SKIP TO Q. 11

10. How much of this was part time? b | |

1 = ALL WAS OR MOST OF IT
2 = SOME OF IT
3 = NONE OF IT; ALL WORK WAS FULL TIME

11. Which of the following best describes your present work situation? b | |

1 = Working – GO TO Q. 12
2 = Student – GO TO Q. 17
3 = Homemaker – GO TO Q. 23
4 = Unemployed or Laid off – GO TO Q. 26
5 = Disabled – GO TO Q. 34
6 = Retired – GO TO Q. 40

WORKING CATEGORY

12. About how many hours do you work in an average week including any overtime?
ENTER ACTUALY NUMBER OF HOURS.

13. Are you employed by someone else, self employed, or do you have another kind of arrangement?

1 = SELF EMPLOYED
2 = SOMEONE ELSE
3 = ANOTHER ARRANGEMENT (EXPLAIN) _____

_____

14. What is your main occupation? b |___|___|___|___|___|___|___|___|___|___|
DOT CODE

_____

_____

_____

_____

15. PROBE IF NECESSARY: “Tell me a little more about what you do.”

_____

_____

_____

16. How long have you been employed in this job? ___|___|___|
CODE ACTUAL NUMBER OF MONTHS

YEARS: _____ MONTHS: _____ WEEKS: _____

GO TO DIARY SECTION

STUDENT CATEGORY

17. Are you a full time student or a par time student? b | |

1 = FULL TIME 2 = PART TIME

18. What is your occupational goal? PROBE: "What kind of work are you hoping to get eventually?"

DOT CODE b | | | | | | | | | |

_____

_____

_____

19. PROBE IF NECESSARY: "Tell me a little more about what you want to do."

_____

_____

_____

20. Are you doing any work for pay at the present time? b | |

1 = YES GO TO WORKING CATEGORY, Q. 12
2 = NO

21. Have you been looking for work during the last four weeks? b | |

1 = YES
2 = NO GO TO DIARY SECTION

22. How long have you been looking for work? | | |

CODE ACTUAL NUMBER OF MONTHS

YEARS: _____ MONTHS: _____ WEEKS: _____

GO TO UNEMPLOYED OR LAID OFF CATEGORY, Q. 26

HOMEMAKER CATEGORY

0 | 2 | 7 | 4 | | | |

23. Are you doing any work for pay at the present time?

1 = YES GO TO WORKIGN CATEGORY, Q. 12 b | |
2 = NO

24. Have you been looking for work in the last four weeks? b | |

1 = YES
2 = NO GO TO DIARY SECTION

25. How long have you been looking for work?

CODE ACTUAL NUMBER OF MONTHS | | |

YEARS: _____ MONTHS: _____ WEEKS: _____

GO TO UNEMPLOYED OR LAID OFF CATEGORY, Q. 26

UNEMPLOYED OR
LAID OFF CATEGORY

26. About how many hours did you work on your last job in an average week, including any overtime? b |___|___|
ENTER ACTUAL NUMBER OF HOURS WORKED

27. Were you employed by someone else, self-employed, or did you have another kind of arrangement? ___|___|

1 = SOMEONE ELSE
2 = SELF-EMPLOYED
3 = OTHER ARRANGEMENT (EXPLAIN) _____

_____

_____

28. What was your main occupation?
PROBE: "What sort of work did you do"
DOT CODE

b |___|___|___|___|___|___|___|___|___|

_____

_____

_____

_____

29. PROBE IF NECESSARY: "Tell me a little more about what you did."

_____

_____

_____

30. How long were you employed in this job?

CODE ACTUAL NUMBER OF MONTHS b | | | |

YEARS: _____ MONTHS: _____ WEEKS: _____

31. Did you quit or were you laid off? b | |

1 = QUIT
2 = LAID OFF
3 = OTHER (SPECIFY) _____

_____

_____

32. How long has it been since you last worked at that job? | | |

CODE ACTUAL NUMBER OF MONTHS

YEARS: _____ MONTHS: _____ WEEKS: _____

33. Have you been looking for work during the last four weeks? b | |

1 = YES
2 = NO
3 = UNABLE TO ANSWER

GO TO DIARY SECTION

DISABLED CATEGORY

34. Before you became disabled, about how many hours did you work on your last job in an average week, including any overtime?
ENTER ACTUAL NUMBER OF HOURS ___|___|___|

35. What was your main occupation before you became disabled?
PROBE: "What sort of work did you do?"
DOT CODE
b |___|___|___|___|___|___|___|___|___|

_____

_____

_____

36. PROBE IF NECESSARY: "Tell me a little more about what you did."

_____

_____

_____

37. Were you employed by someone else, were you self-employed, or did you have another kind of arrangement? b |___|

1 = SOMEONE ELSE
2 = SELF-EMPLOYED
3 = OTHER (SPECIFY) _____

_____

38. How long were you employed in this job? ___|___|___|
CODE ACTUAL NUMBER OF MONTHS

YEARS: _____ MONTHS: _____ WEEKS: _____

39. Do you expect to go back to work? ___|

1 = YES 2 = NO

GO TO DIARY SECTION

RETIRED CATEGORY

40. How long has it been since you worked for pay at your main occupation?
CODE ACTUAL NUMBER OF MONTHS

YEARS: _____ MONTHS: _____ WEEKS: _____

41. About how many hours did you work on your last job in an average week, including any overtime?
ENTER ACTUAL NUMBER OF HOURS

42. What was your main occupation before you retired?
PROBE: What sort of work did you do?"
DOT CODE b | | | | | | | | | |

_____

_____

_____

_____

0 | 3 | 7 | 4 | | | | |

43. Tell me a little more about what you did.

_____

_____

_____

44. Were you employed by someone else, were you self-employed, or did you have another kind of arrangement?

1 = SOMEONE ELSE
2 = SELF-EMPLOYED
3 = OTHER (SPECIFY) _____

_____

45. How long were you employed in this job?
CODE ACTUAL NUMBER OF MONTHS

YEARS: _____ MONTHS: _____ WEEKS: _____

GO TO DIARY SECTION

Diary Section

It is now time to ask you questions about how you spent your time on

_____
DAY OF WEEK, MONTH DATE

I will begin at 12:01 a.m. (one minute past midnight).

BEGIN AT QUESTION 1 – COLUMN A

Interview 5 Set Up

Thank you so much for answering these questions. This information will be very helpful in understanding how people who are blind or visually impaired use their time and how they allocate their resources.

Now we need to set up a time for our fifth and final interview. I will be listening to you tell me what you did or how you spent your time on the day before my telephone call. I will want you to tell what you did or over a 24 hour period.

Let me assure you again that the fifth interview is completely voluntary. Everything you tell me will be kept private.

I would like to telephone you on _____ at _____ __
o'clock (pm/am). DATE TIME

I will be asking you to tell me what you did on _____,_____.
WEEK DAY MONTH DAY

DIARY DATE b |__|__|__|__|__|__|__|
MONTH DAY YEAR

DAY OF WEEK ____|___|

M=1, Tu=2, W=3, Th=4, F=5, Sa=6, Su=7

Will this time be okay with you?

1 = YES
2 = NO

Since that time is not okay, may I call you to reschedule or would now be OK?

RESCHEDULE TIMES

_____ _____ a.m./p.m.
DATE TIME

_____ _____
WEEK DAY MONTH DAY

DIARY DATE b |__|__|__|__|__|__|__|
MONTH DAY YEAR

DAY WEEK (M=1, Tu=2, W=3, Th=4, F=5, Sa=6, Su=7) ___|___|

Thank you again for answering these questions. This information will be very helpful. I look forward to talking with you on _____ about what you did on _____.
INTERVIEW DATE DIARY DATE

Thank you.

Good-bye.

EXACT TIME NOW _____(AM/PM)

TIME AND MONEY – BLIND
INTERVIEW 5

EXACT TIME NOW _____(AM/PM)

1. SUBJECT NUMBER 0 | 1 | 7 | 5 | | | |
2. INTERVIEWER b | | |
3. REVIEWED BY b | | |
4. INTERVIEW NUMBER 5 |
5. DIARY DAY OF WEEK b | |

M=1, Tu=2, W=3, Th=4, F=5, Sa=6, Su=7

6. DIARY MONTH AND DAY b | | | | |
7. INTERVIEW DATE b | | | / | | / | |
8. INTERVIEW DAY OF WEEK |

M=1, Tu=2, W=3, Th=4, F=5, Sa=6, Su=7

_____

May I speak to _____? IF NOT AVAILABLE, GET A TIME TO CALL BACK.

This is _____ from the Research and Training Center at Mississippi State University. I want to thank you for agreeing to talk with me about your visual problems and how you have been using your time.

Before I begin asking you to recall how your time on _____, I'd like to ask you a few more questions. DIARY DATE

THIS STATEMENT MUST BE READ TO ALL RESPONDENTS:

This interview is completely voluntary and confidential. If we come to a question that you don't want to answer, please tell me, and we will go on to the next question. Is it all right to begin asking you questions about your education?

I HAVE READ THIS CONFIDENTIALITY STATEMENT TO THE RESPONDANT _____.
YOUR SIGNATURE

HOUSEHOLD SECTION

9. Have you ever been married? b | |

1 = YES
2 = NO SKIP TO Q. 11

10. Are you married now? b | |

1 = YES
2 = NO

11. Including both children and adults, how many people live with you? b | | |

ENTER EXACT NUMBER INCLUDING THE RESPONDENT
IF ONLY 1 IN HOUSEHOLD, SKIP TO Q. 16.

12. Are any of these children 18 years of age or younger? b | |

1 = YES
2 = NO SKIP TO Q. 14

13. What are the ages of your children? b | | |

Let's start with the oldest. | | |

STOP CODING WHEN YOU REACH CHILD #4 | | |

| | |

14. Is anyone who lives with you blind or visually impaired? b | |

1 = YES
2 = NO SKIP TO Q. 16

15. Who else in your household is blind or visually impaired? b | |

CIRCLE ALL THAT APPLY

1 = SPOUSE
2 = OWN CHILDREN
4 = OTHER HOUSEHOLD MEMBER

16. I'd like to know what type of community you live in. Is it a city, a suburb, a small town or village, or a rural or farming community? ___|___|

1 = CITY
2 = SUBURB
3 = SMALL TOWN OR VILLAGE
4 = RURAL OR FARMING COMMUNITY
5 = OTHER, SPECIFY _____

17. Now, I'd like to know about how satisfied you are with your work? Would you say that you are very satisfied, somewhat satisfied, equally satisfied and dissatisfied, somewhat dissatisfied, or very dissatisfied? (THIS INCLUDES FULL-TIME, PART-TIME, VOLUNTEER WORK, ETC.) PROBE: IF A PERSON DOES NOT THINK THIS QUESTION FITS THEM, ASK HOW SATISFIED THEY ARE UNDER THE CIRCUMSTANCES. ___|___|

1 = VERY SATISFIED
2 = SOMEWHAT SATISFIED
3 = EQUALLY
4 = SOMEWHAT DISSATISFIED
5 = VERY DISSATISFIED
9 = DON'T KNOW

18. How satisfied are you with your family life? REPEAT LIST IF NECESSARY. PROBE: IF A PERSON DOES NOT THINK THIS QUESTION FITS THEM, ASK HOW SATIFIED THEY ARE UNDER THE CIRCUMSTANCES. ___|___|

1 = VERY SATISFIED
2 = SOMEWHAT SATISFIED
3 = EQUALLY
4 = SOMEWHAT DISSATISFIED
5 = VERY DISSATISFIED
9 = DON'T KNOW

19. How satisfied are you with your social life (THIS INCLUDES FRIENDS AND SOCIAL ACTIVITIES.) REPEAT THIS LIST IF NECESSARY. PROBE: IF A PERSON DOES NOT THINK THIS QUESTION FITS THEM, ASK HOW SATISFIED THEY ARE UNDER THE CIRCUMSTANCES. ___|___|

1 = VERY SATISFIED
2 = SOMEWHAT SATISFIED
3 = EQUALLY
4 = SOMEWHAT DISSATISFIED
5 = VERY DISSATISFIED
9 = DON'T KNOW

20. Taken all together, how satisfied are you with life in general? REPEAT LIST IF NECESSARTY. PROBE: IF A PERSON DOES NOT THINK THIS QUESTION FITS THEM, ASK HOW SATISFIED THEY ARE UNDER THE CIRCUMSTANCES. ___|___|

21. What racial or ethnic group do you belong to? READ LIST IF NECESSARY. ___|___|

1 = BLACK
2 = HISPANIC
3 = AMERICAN INDIAN
4 = WHITE
5 = ASIAN
6 = OTHER, SPECIFY _____

_____

VOCATIONAL REHABILITATION

A number of people with visual disabilities receive services from the state vocational rehabilitation agency.

22. Have you ever received services from the state vocational rehabilitation agency? b | |

1 = YES
2 = NO GO TO INCOME SECTION, Q. 24

23. I will read a list of services that are offered to some people who are served by the state vocational rehabilitation agency. When I read the service, please tell me if you have ever received the service. CIRCLE ALL USED.

1 = YES
2 = NO
9 = DON'T REMEMBER

a. Physical examination? |

b. Eye examination? |

c. Glasses or optical aids? |

d. Surgery for the visual disability or eye problem? |

e. Medication for the visual disability or eye problem? |

f. Vocational testing? |

g. Counseling? |

h. Vocational or college training or tuition? |

i. Travel costs to attend training or to see a doctor? |

j. Equipment such as a computer or typewriter? |

k. Equipment such as home appliances like a hot liquid warmer? |

0 | 2 | 7 | 5 | | | |

l. Mobility aids such as a cane? ___|

m. Job placement? ___|

n. Independent Living Services? ___|

o. Did you receive any other services? SPECIFY _____ ___|

_____

INCOME SECTION

24. Was your household's total <u>monthly</u> income from all sources between:

b | | | | |

250 = $0 – $500
751 = $501 – $1000
1251 = $1,001 – $1,500
1751 = $1,501 – $2,000
2251 = $2,001 – $2,500
2751 = $2,501 – $3,000
3251 = $3,001 – $3,500
3750 = Greater than $3,500
9999 = Don't know

25. Some people with visual disabilities received checks from the social security administration, the state, the veterans administration, and so on. Do you now receive any money from the following agencies?
READ LIST

1 = YES
2 = NO, SKIP TO Q. 28

a. Social Security Disability Insurance, SSDI b | |

b. Supplementary Security Income, SSI b | |

c. Veterans Administration, the VA b | |

d. State or local Government b | |

e. Vocational Rehabilitation, VR b | |

f. Any other sources? SPECIFY _____ b | |

_____

_____

26. About how many years have you received money from these sources
CODE EXACTLY NUMBER OF YEARS. ___|___|

99 – DON'T KNOW

27. About how much a month do you receive from these sources?
(TALKING ALL SOURCES TOGETHER.) CODE TO THE NEAREST DOLLAR. ___|___|___|___|___|

9998 - SOMEONE ELSE HANDLES MONEY
9999 - DON'T KNOW

Now, I'd like to ask you some questions about the amount of money you spend for your living expenses. I'll ask about your household's monthly expenditures first.

28. About how much a month does your household spend for housing?
CODE TO THE NEAREST DOLLAR b |___|___|___|___|

9998 = SOMEONE ELSE HANDLES MONEY
9999 = DON'T KNOW

29. How much does your household spend a month for utility bills?
CODE TO THE NEAREST DOLLAR b |___|___|___|___|

9998 = SOMEONE ELSE HANDLES MONEY
9999 = DON'T KNOW

30. How much does your household spend a month on transportation?
CODE TO THE NEAREST DOLLAR b |___|___|___|___|

9998 = SOMEONE ELSE HANDLES MONEY
9999 = DON'T KNOW

Now, let me ask you about your own, personal monthly expenses.

31. About how much a month does your health insurance cost?
CODE TO THE NEAREST DOLLAR b |___|___|___|___|

9998 = SOMEONE ELSE HANDLES MONEY
9999 = DON'T KNOW

32. About how much a month does your medical care cost, excluding insurance?
CODE TO THE NEAREST DOLLAR b |___|___|___|___|

9998 = SOMEONE ELSE HANDLES MONEY
9999 = DON'T KNOW

33. About how much a month does your life insurance cost?
CODE TO THE NEAREST DOLLAR b |__|__|__|__|

9998 = SOMEONE ELSE HANDLES MONEY
9999 = DON'T KNOW

Now, let me ask about the weekly expenses of you and your household.

34. About how much a week does your household spend for food? This includes eating out and at home.
CODE TO THE NEAREST DOLLAR

9998 = SOMEONE ELSE HANDLES MONEY
9999 = DON'T KNOW

35. How much does your household spend a week for housekeeping and cleaning supplies?
CODE TO THE NEAREST DOLLAR

9998 = SOMEONE ELSE HANDLES MONEY
9999 = DON'T KNOW

36. How much does your household spend a week for dry cleaning and laundry?
CODE TO THE NEAREST DOLLAR

9998 = SOMEONE ELSE HANDLES MONEY
9999 = DON'T KNOW

37. How much does your household spend a week for entertainment?
CODE TO THE NEAREST DOLLAR

9998 = SOMEONE ELSE HANDLES MONEY
9999 = DON'T KNOW

Diary Section

It is now time to ask you questions about how you spend your time on

_____
DAY OF WEEK, MONTH DATE

I will begin at 12:01 a.m. (one minute past midnight).

BEGIN AT QUESTION 1 – COLUMN A

INTERVIEW TERMINATION

Thank you so much for participating in this study. The information you have shared with us will be very helpful to us and the men and women with vision problems.

A check for $5.00 will be sent to you in the next few weeks. Thank you once more for talking with us. Good-bye.

EXACT TIME NOW _____ (AM/PM)

Appendix C
Referrals to Sighted Subjects

REFFERALS TO SIGHTED SUBJECTS

Interviewer's name and I.D. #: _____

Name and I.D. # of blind/visually impaired respondent from whom referral is sought: _____

Gave referral during interview # 1? (CIRCLE)

1. Yes 2. No

|

Is follow-up with the impaired R appropriate?

1. Yes 2. No (EXPLAIN: _____

|

| _____

|

| _____)

|

Date/outcome of each request for a referral:

Date	Outcome

Final status (CIRCLE):

1. Obtained referral --- Sighted respondent:

   Name: _____

   Address: _____

   _____

   Telephone: Home ( ) _____

   Work ( ) _____

   Date referral obtained : _____

2. No referral

INTERVIEW REPORT FORM

Respondent's I.D. # : _____ Interviewer's I.D. # : _____

Interview # (Circle) : 1 2 3 4 5

Length of interview : _____

1. In general, how cooperative was the respondent?

_____ Very cooperative
_____ Somewhat cooperative
_____ Somewhat uncooperative (Comment)
_____ Very uncooperative (Comment)

COMMENTS: _____

_____

_____

2. Do you have any reason to question the accuracy or completeness of any of the respondent's answers? (If yes, explain).

_____

_____

_____

3. Did any questions seem difficult, confusing, annoying, or objectionable to the respondent? (If yes, explain).

_____

_____

_____

4. Did the respondent have any other problems with the interview not already noted above? (If yes, explain).

_____

_____

_____

5. Did you have any problems with the interview? (If yes, explain).

_____

_____

_____

6. Did you learn anything related to the respondent's use of time or money that we should know but that might not have "come through" on the questionnaire? (If yes, explain).

_____

_____

_____

_____

7. Record here any other comments about the respondent or the interview. In particular, state any reasons you have to believe that the respondent might not be able or willing to be interviewed again and anything else about the respondent or the interview that you would like us to know or that you think we should know.

_____

_____

_____

_____

PLEASE REMEMBER TO EDIT THE INTERVIEW!

Appendix E
Activities List for Time Diaries

WORK AND OTHER INCOME PRODUCING ACTIVITIES

1. Normal work: activities at main job site including travel as part of job, overtime, "working," "at work."
2. Work at home: work activities for pay performed in the "home" when home is the main work place; includes travel which is part of work at home.
3. Job search: look for work; includes visits to employment agencies, phone calls to prospective employers, answering want ads.
4. Second job: paid work activities which are not part of main job (use this code only when respondent clearly indicates second job or "other" job); paid work for those not having main job, such as garage sales, rental property, flea market.
5. Eat, smoke, drink coffee as secondary activity while working.
6. Lunch or other meals at work place: lunch or other meals eaten at work, cafeteria, lunchroom when "where" = work (lunch at restaurant, code 91; lunch at home, code 86).
7. Other work-related activities: normal work brought home to complete.
8. Interrupted travel with guide dog, cane, etc.
9. Noninterrupted travel with guide dog, cane, etc.
10. Arrange for interrupted travel.
11. Arrange for noninterrupted travel.
12. Wait for interrupted travel.
13. Wait for noninterrupted travel.
14. Coffee breaks and other breaks at workplace: unscheduled breaks and other nonwork during work hours at the workplace, such as "took break," "had coffee" (as primary activity), unspecified breaks. This code includes drinks and snacks consumed as part of the break.
15. Preparation for work at nonwork site, such as "pack briefcase" while at home.
16. Wait for work activity other than travel.
17. Travel related to job search, unemployment benefits, welfare, food stamps.

18. Travel to and from workplace with interruptions.

19. Travel to and from workplace without interruptions.

HOUSEHOLD ACTIVITIES

20. Meal preparation: cook, fix lunch, make grocery list, plan meals, fix coffee, "check refrigerator for shopping list"; includes fixing coffee at work.

21. Serve food, set table, put groceries away, unload car after grocery shopping.

22. Do dishes: rinse dishes, load dishwasher, clean up after meal, clear table.

23. Routine indoor cleaning and chores: pick up, dust, make beds, wash windows, vacuum, "clean," "fall/spring cleaning," "housework," "clean house" (assume inside).

24. Routine outdoor cleaning and chores: work in yard, rake leaves, mow grass, remove garbage, shovel snow, put on storm windows, clean garage, cut wood.

25. Laundry and clothes care: wash, iron, fold, mend ("sew" as leisure activity, code 180), put away clothes, bring in clothes from car if respondent used laundromat (if respondent paid for someone to clean clothes, code 70).

26. Indoor repairs or maintenance: fix furnace, plumbing, paint room.

27. Exterior repairs or maintenance: paint house, fix roof, repair driveway (patch).

28. Car care: necessary repairs and routine care to cars, such as tune up, car maintenance, change oil, change tires, wash cars, "work on car" except when clearly as hobby.

29. Home improvements: additions and remodeling to house or garage, new roof.

30. Indoor repairs: fix, repair appliances or furniture.

31 Improvement to grounds around house, such as repave driveway.

32. Garden: flower or vegetable garden, spade, weed, compost, pick, "work in garden," "pick asparagus."

33. Houseplant care.

34. Pet care: care of household pets including activities with pets, play with dog, walk dog (care for pets of relatives or friends, code 84 or 85).

35. Other indoor, NA whether cleaning or repair: "did things in house," miscellaneous, "work around house," NA if indoor or outdoor, arrange furniture, arrange flowers.

36. Other outdoor: "work outside," "putter in garage."

37. Household paperwork: pay bills, balance checkbook, make nongrocery lists, get mail (post office services at post office building, code 69), work on budget, (personal letters, code 213).

38. Wait for household activity other than travel.

39. Other household chores (no travel): pick up things at home, e.g., "pick up deposit slips" (relate travel to purpose), wrap presents, pack/unpack car, "settle in" after trip, pack to move, move boxes, look/search for things at home (inside or outside).

CHILD CARE ACTIVITIES

Child Care for Children of Household or Relatives.

40. Baby care: care to children age 4 and under.

41. Child care: mixed ages or NA ages of children; nonspecific ages.

42. Child care: care to children age 5-17.

43. Help/teach children learn, fix, make things: help children bake cookies or fix bike (homework, code 44).

44. Help with homework or supervise homework.

45. Give child orders or instructions: ask them to help.

46. Read to child.

47. Conversations with household children only: listen to children, bedtime stories.

48. Play: other indoor activities with children including games, outdoor activities with children including sports, walks, biking, other outdoor games; includes playing with respondent's children from previous marriage who are not living with respondent.

49. Medical care at home or outside home: activities associated with children's health, such as "take son to doctor," "give daughter medicine."

Other Child Care.

50. Coordinate or facilitate child's social or instructional nonschool activities (travel, code 55).

51. Babysit (unpaid) or child care outside respondent's home or to children not residing in household.

52. Other child care including phone conversations relating to child care other than medical: call babysitter, "pick up nephew at sister's house."

53. Wait for travel for social or nonschool activities.

54. Wait for child care activity other than travel, such as waiting for son to get haircut.

55. Travel related to child's social and instructional nonschool activities.

56. Other travel related to child care activities.

OBTAINING GOODS AND SERVICES

Note: These activities include telephone calls to obtain goods and services.

57. Groceries: supermarket, shop for food.

58. All other shopping for goods: clothing, small appliances, at drug stores, "shop," "window shop," unspecified shopping.

59. Grocery shop with guide dog, cane, etc.

60. All other shopping for goods with guide dog, cane, etc.

61. Shop for financial services with guide dog, cane, etc.

62. Shop for other government services with guide dog, cane, etc.

63. Durable household goods: shop for large appliances, cars, furniture, computers.

64. House, apartment: activities connected to buying, selling, renting, or looking for house or apartment including travel to look at real estate property (for own use).

65. Wait to obtain goods and services other than travel: wait for father to pick up meat, wait for stores to open, wait for others while they're shopping, sit in car while waiting for rain to stop before shopping.

66. Personal care: beauty, barber shop, hairdressers.

67. Medical care for self: visits to doctor, dentist, optometrist including making appointments.

68. Financial services: activities related to taking care of financial business; go to bank, pay utility bills in person (pay bills by mail, code 37), go to accountant, tax office, loan agency, insurance office; bills paid in person.

69. Other government services: post office, services at post office building, driver's license, sporting license, marriage license, police station.

70. Clothes repair and cleaning: cleaners, laundromat, tailor, bring in clothes from car if someone else cleaned clothes (if respondent cleaned clothes, code 25).

71. Appliance repair: furnace, water heater, electric or battery operated appliances (including watching repair person), auto service (repair and other auto services including waiting for such services), household repair including furniture, or other NA repair services).

72. Other professional services: lawyer, counseling (therapy).

73. Pick up food at takeout place: purchase food to take elsewhere to eat; includes arranging fast-food delivery.

74. Other services: "go to garbage dump," other nonprofessional services, leave clothing at Goodwill, return books to library, deliver items to friend, put away things from swap meet.

75. Travel with guide dog, cane, etc.

76. Arrange for travel.

77. Wait for travel.

78. Errands: "run errands," NA whether for goods or services, borrow goods; includes getting paper.

79. Travel: travel related to obtaining goods and services and/or household activities except code 64 (travel to look to buy property).

PERSONAL NEEDS AND CARE

80. Wash: shower, bathe oneself, "bathroom routine."

81. Dress: get ready, pack and unpack clothes, personal hygiene, go to bathroom, "groom," shave, brush teeth; includes "preparation for banquet" if respondent is dressing.

82. Medical care to respondent: includes such things as insulin shots given by another person.

83. Medical care to adults in household.

84. Nonmedical care to adults in household: "got my wife up," "ran bath for my husband," push grocery cart for wife, care for pet belonging to another person.

85. Help and care to relatives not living in household, such as neighbors, friends, and others with no relationship to respondent: provide for needs (except travel), help move, bring food, assist in emergencies, do housework, visit when sick, care for pet belonging to another person.

86. Meals at home including coffee or drinks as part of meal: food from restaurant eaten at home, "breakfast," "lunch" (smoking, coded 218).

87. Snacks at home: includes coffee or drinks not as part of meal.

88. Snacks away from home eaten at friend's home or other places away from home (park bench) that do not include workplace or restaurant: coffee or drinks not part of meal; includes nonspecified location for snack.

89. Snacks at restaurant: coffee, drinks not part of snack.

90. Meals away from home: eaten at friend's home including coffee or drinks as part of meal, also other meals eaten other places away from home (park bench) that do not include workplace or restaurant; includes nonspecified location for meal.

91. Meals eaten at restaurant: includes coffee or drinks as part of meal.

NOTE: Meals eaten at work place, code 6.

Meals as secondary activity while working, code 5.

Coffee breaks at work, code 14.

Alcoholic drink by itself, code 217.

Smoking, code 218.

92. Night sleep: longest sleep for day (may occur during day for night shift workers); includes "in bed," but not asleep.

93. Naps and rest: rest period, "doze," "lay down" (relax, code 214).

94. Naps and rest that are illness related.

95. Wait for personal needs and care activities other than travel: wait to hear from daughter, wait for wife to get up, wait for dinner at brother's house, wait for plane (meet someone at airport).

96. Travel (helping) with guide dog, cane, etc.

97. Personal travel with guide dog, cane, etc.

98. Sex: make out, personal, private, "none of your business," affection between household members, hug, kiss, sit on lap.

99. Arrange for travel.

100. Wait for travel (helping).

101. Wait for travel.

102. Other personal: watch personal care activities, stop at home (NA what for), get hysterical, laugh, cry, moan (hurt head).

103. Travel (helping): travel related to codes 84 and 85 including travel which is the helping activity.

104. Travel: travel related to other personal care activities; travel, NA purpose of trip, e.g., "went to Memphis" (no further explanation given).

EDUCATION AND PROFESSIONAL TRAINING

105. Student: attend classes or school if full-time student; other classes, courses, or lectures which are academic or professional; respondent not a full-time student or NA whether a student; being tutored, watch film.

106. Homework: study, research, or read for classes or profession except for current job (code 7); "went to library."

107. Other education: "in discussion group."

108. Wait for educational and professional training activities other than travel.

109. Travel with guide dog, cane, etc.

110. Wait for travel.

111. Travel: travel related to education, travel to school not originating from home, travel related to school and professional training.

ORGANIZATIONAL ACTIVITIES

Professional/Union Organizations: State Education Association, AFL-CIO, Teamsters.

112. Attend meetings of professional or union groups.

113. Other activities of professional or union groups: other activities as member of professional or union group including social activities and meals.

Special Interest/Identify Organizations (including groups based on sex, race, national origin): NOW, NAACP, Polish-American Society, Senior citizens, Weight Watchers.

114. Attend meetings of identity organizations.

115. Other activities of identity organizations: other activities as member of special interest groups including social activities and meals.

Political Party and Civic Participation: Citizens' groups, Young Democrats, radical political groups, civic duties.

116. Attend meetings of political or citizens' organizations.

117. Other activities of political or citizens' organizations: other participation in political party and citizens' groups including social activities, vote, jury duty, help with elections, and meals.

Volunteer, Helping Organizations: hospital volunteer group, United Fund, Red Cross, Big Brother/Sister.

118. Attend meetings of volunteer, helping organizations.

119. Officer or member: work as an officer or volunteer of helping organizations, fund raising activities, collect money, plan collection drive.

120. Direct help to individuals or groups as member of volunteer, helping organizations: visit, bring food (drive as a helping activity, code 138).

121. Other activities as member of volunteer, helping organizations including social events and meals.

Religious Groups: ladies aid, circle, missionary society, Knights of Columbus.

122. Attend meetings of religious, helping groups.

123. Other activities of religious, helping groups: other activities as member of religious, helping groups including social activities and meals.

124. Attend meetings of other church groups which are not primarily helping-oriented or NA if helping-oriented.

125. Other activities of other church groups: other activities as member of church groups which are not helping oriented or NA if helping including social activities and meals, choir practice, Bible class, Sunday School classes.

Religious Practice.

126. Attend services of church or synagogue including participation in services: usher, sing in choir, lead youth group, go to church or funeral. Wait for church to begin is coded 132.

127. Individual practice: religious practice carried out as an individual or in a small group; pray, meditate, Bible study group (not at church), visit graves; devotions including reading the Bible.

Fraternal Organizations: Moose, VFW, Kiwanis, Lions, Civitan, Chamber of Commerce, Shriners.

128. Attend meetings of fraternal organizations.

129. Other activities of fraternal organizations: other activities as member of fraternal organizations including social activities, helping activities, and meals.

Child/Youth/Family/Organizations: PTA, PTO, Boy/Girl Scouts, Little League, YMCA/YWCA, school volunteer.

130. Attend meetings of family organizations.

131. Other activities of family organizations: other activities as member of child/youth/family oriented organizations including social activities and meals.

Waiting.

132. Wait for organizational activities other than travel: wait for church to begin.

Other Miscellaneous Organizations: don't fit above.

133. Other organizations: any activity as member of organizations not fitting into previous categories (meetings and other activities included here), attend "Club House Coffee Klatch," "meeting" NA kind, clean up after NA banquet, check into swap meet (sell & look).

Travel Related To Organizational Activities.

134. Travel with guide dog, cane, etc.

135. Arrange for travel.

136. Wait for helping related travel.

137. Wait for travel.

138. Travel related to organizational activities as member of volunteer, helping organizations including travel which is the helping activity.

139. Travel (other organization-related): travel related to all other organizational activities.

ENTERTAINMENT/SOCIAL ACTIVITIES

Attending Spectacles, Events.

140. Sports: attend sports events (football, basketball, hockey, etc).

141. Miscellaneous spectacles, events: circus, fairs, rock concerts, accidents.

142. Movies: "went to the show."

143. Theater, opera, concert, ballet.

144. Museums, art galleries, exhibitions, zoos.

Socializing.

145. Visit with others: socialize with people other than respondent's own household members either at respondent's home or another home (visit on phone, code 209), talk or chat in the context of receiving a visit or paying a visit, entertainment (visit with household members, code 211).

146. Party: reception, wedding, birthday dinner, celebration at home, open presents at party, unpack gifts from shower, decorate for party, prepare for baby shower.

147. At bar: cocktail lounge, nightclub; socialize or hope to socialize at bar or lounge.

148. Dance.

149. Wait for entertainment or socializing activities other than travel: wait for movie or other event, wait for date.

150. Other events: other events or socializing which don't fit above, look at gifts (other than at party), tour of home (friend or other).

151. Travel with guide dog, cane, etc.

152. Wait for travel.

153. Travel: walk to neighbor's house for socializing.

SPORTS AND ACTIVE LEISURE

Active Sports: Participation.

154. Football, basketball, baseball, volleyball, hockey, soccer, field hockey: pick up softball equipment.

155. Golf: miniature golf, register to play golf.

156. Swim, waterski.

157. Bowl, pool, ping-pong, pinball.

158. Frisbee, catch.

159. Exercise, yoga.

Out of Doors.

160. Fish: pick up fishing gear.

161. Boat: sail, canoe, hook up boat to car.

162. Camp: at the beach.

163. Snowmobile, dune-buggies.

164. Gliding, ballooning, flying.

165. Excursions: pleasure drives (no destination), rides with family, "toured village or lodge."

166. Picnic.

Walking, Biking.

167. Walk for pleasure: walk around outside.

168. Hike.

169. Jog, run.

170. Bicycle.

171. Motorcycle.

172. Horseback riding.

Hobbies.

173. Photography.

174. Work on or repair leisure equipment: repair boat, "sort out fishing tackle".

175. Collections, scrapbooks.

176. Carpentry, woodwork.

177. Other hobbies such as work on model airplane, ham radio, police scanner.

Domestic Crafts.

178. Preserve foodstuffs: can, pickle.

179. Knit, needlework, weave, crochet including classes, crewel, embroidery, quilt, quell, macrame.

180. Sew.

181. Care of animals or livestock when respondent is not a farmer (pets, code 34; "farmer," ode 2), feed birds, watch birds; includes animal shows.

Art and Literature.

182. Sculpture, paint, pot, draw, show sketches.

183. Literature, poetry, write (write letters, code 213), write diary.

Music/Theater/Dance.

184. Play musical instrument including practicing, whistling.

185. Sing: singing by or to yourself.

186. Act: rehearsal for play.

Games.

187. Play card games: bridge, poker.

188. Play board games: Monopoly, Yahtzee, Bingo, Dominoes.

189. Play social games: scavenger hunts, "play games" (NA kind).

190. Puzzles.

Waiting.

191. Wait for sports or active leisure other than travel.

Classes/Lessons And Computer Usage.

192. Lessons in sports activities: swim, golf, tennis, skate, roller skate, lessons in gymnastics, dance, judo, body movement.

193. Computer usage, nonwork related.

194. Lessons in music, singing, instruments.

195. Other lessons, not listed above.

Other.

196. Other active leisure: "hang around," astrology, swing, at park, show slides, hang around airport (NA reason).

197. Travel with guide dog, cane, etc.

198. Arrange for travel.

199. Wait for travel.

200. Travel: travel related to sports and active leisure, vacation travel.

PASSIVE LEISURE

201. Radio.

202. TV: turn off TV.

203. Records, tapes: "listen to music," listen to others play musical instruments, record music.

204. Read books: current job related, code 7; professionally or class related, code 106.

205. Read magazines, reviews, pamphlets.

206. Read NA what or other: nonspecified reading.

207. Talking books: recorded materials for people with visual impairments, materials read to respondent, recording reading material for people with visual impairments.

208. Read newspapers.

209. Phone conversations not coded elsewhere including all visits by phone: check for phone messages that are not business related.

210. Other talking/conversations: face-to-face conversations, not coded elsewhere (children in household, code 47); visit other than codes 145 or 211.

211. Conversations with household members only: face-to-face conversations with adults, or children and adults (children only, code 47).

212. Wait for passive leisure activities other than travel: wait for call.

213. Letters (read and write): read mail, "type" (assume letters).

214. Relax.

215. Think, plan, reflect.

216. "Do nothing:" "sat," just sat (if "sat and ..." then delete "sat and").

217. Drink (alcohol): drinking is coded as an activity wherever it appears, except as part of meal or snack (code 86, 87, 88, 89, 90, 91).

218. Smoke.

219. Other passive leisure: smoke dope, pester, joke around, mess around, lay in sun, look at slides, stop at excavation, look at pictures, watch plane leave, girl/boy watch, waste time, in and out of house, watch home movies, watch boats.

220. Travel that is related to passive leisure.

221. Travel with guide dog, cane, etc.

222. Arrange for travel.

223. Wait for travel.

224. End of diary code. This is not an activity code.

Appendix F
Activities Not Engaged In by Respondents

Activities Not Engaged In by Respondents

Work:
Unemployment benefits: applying for or collecting unemployment compensation, welfare, food stamps.

Child Care:

Disciplining child, yelling at kids, spanking children, correcting children's behavior, telling them to behave.

Coaching/leading outdoor, nonorganizational activities.

Sports and Active Leisure:

Tennis, squash, racquetball, paddleball.

Skiing, ice skating, sledding, roller skating.

Judo, boxing, wrestling.

Hunting.

Passive Leisure:
Arguing or fighting with people other than household members, household and nonhousehold members or NA, breaking up fight with nonhousehold member.

Arguing or fighting with household members only, breaking up fight with household member.